PSYCHOLOGY FOR EFFECTIVE TEACHING

Psychology for Effective Teaching

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Preface

I⊤ HAS LONG BEEN the author's belief that, to be functional, a course in educational psychology must relate to the problems the teacher faces when he undertakes the task of promoting the growth of his pupils toward desirable goals The prospective teacher should gain a sound insight into those psychological principles upon which effective classroom practice must be based, and he should become aware of the facts which underlie these principles Thus, there is no apology for the emphasis upon research data that will be found in this text

On the other hand, it is clearly futile to attempt to include in an introductory course more than a fraction of the data of experimental psychology Likewise, exploring issues that are theoretically controversial is of doubtful value to the classroom teacher, who deals with live children dynamically interacting not only with their school environment but with cultures and personalities outside the school

There must, nevertheless, be an understanding of theory, which can provide a framework within which insights can develop—insights that can be translated into classroom procedure Only when theory is emphasized to the exclusion of its relevance to the practical situation does it become objectionable

On the other hand, research is sufficiently clear on the futility of facts per se as to render unacceptable in an introductory course in educational psychology the bulk of the data derived from laboratory and animal experimentation For the same reason, what counts are not the fine points in the experimental design of a research study but rather the study's implications for classroom practice

The author believes that no theoretical position can be more practical and functional from the standpoint of the classroom teacher than that emphasizing the purposiveness of behavior Not only does such a position appear sound from a theoretical and empirical point of view but it also puts vitality and meaning into the task of guiding the growth and

,development of children It is also a position which is challenging and interesting to prospective teachers who see its functional practicality not only in the classroom but in every aspect of life

The present text is organized around the determinants of human behavior, a concept which is introduced early in Chapter 2 and which is emphasized as the central theme of the whole book The aim is to provide, not specific answers and prescriptions, but rather viewpoints, outlooks, and professional understanding of children and the procedures by means of which their growth can be promoted most effectively

The book has gradually evolved from the author's teaching during the past ten years of more than twenty-five classes in undergraduate and graduate educational psychology His experience in dealing with teachers and prospective teachers both in college classes and in the field as well as his own experience in teaching at every level in public school and college has convinced him of the need for giving teachers a better understanding of the *why* of human behavior

The discussion in the text is self-contained and—it is hoped—understandable even by the beginning student An attempt has been made to keep the style of writing clear, direct, and generally as simple as the presentation of material of adequate psychological complexity will allow Each chapter contains a list of exercises and supplementary material selected to complement that of the chapter These have, for the most part been tried in actual classes and found effective in rounding out the students' grasp of educational psychology The reading lists have been made as brief as possible Students are urged to consult other sources such as the *Educational Index* and the *Encyclopedia of Educational Research* for additional references in keeping with their individual and collective needs and goals

Although the text is the work of a single author, many persons have contributed directly or indirectly to its completion Many have been cited individually in the references To them and to their publishers, the author expresses his sincere gratitude and appreciation Special thanks also go to the author's own teachers and to his former students whose suggestions and criticisms have been most helpful

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To the Student

As a future teacher, becoming acquainted with the foundation for effective teaching, look upon the various aspects of the subject in terms of the actual problems which will confront you in the classroom Furthermore, remember that educational psychology should not be dismissed from your mind promptly after the final examination but kept constantly in the foreground as a major criterion in the evaluation of teaching procedures and practices discussed in college classes and encountered on the job

Teachers need to be alert, to be scientists ever in search of better answers to old problems And there are no simple answers to the many questions regarding human behavior any more than there are simple answers to the problems facing the medical doctor or the atomic physicist The reason for you taking a course in educational psychology is not to provide you with cook-book recipes and rules of thumb aimed at dealing with the nonexistent "average" student but rather to provide you with insights into the psychology of being a teacher, to make you, in a sense, an *educational psychologist*—an *educator* and a *psychologist* for, as Jersild points out, every teacher is in his own way a psychologist, everything he does, says, or teaches has or could have a psychological impact

Psychology for Effective Teaching

1

Psychology and the Teacher

Every teacher is of necessity a psychologist in function, with or without training.

WOODRUFF [424]

THE STATUS OF ANY PROFESSION is determined in large measure by, the quality of the professional services it provides. These are in turn dependent upon the professional insights and understandings upon which sound professional decisions can be based. Teaching has come a long way in establishing itself as a profession but if it is to be recognized in its true importance and dignity, teachers must continue to improve the professional skills with which they guide the growth and development of their students. This they can do only as they have a thorough understanding of the principles of educational psychology for such principles provide the only sound basis for effective teaching.

Educational Psychology: a Branch of Psychology

Educational psychology is only one of the many branches of applied psychology which derive their existence from pure psychology and attempt to pinpoint the applications of psychology to a specific area. Thus,

educational psychology is concerned with the application of the principles, techniques, and other resources of psychology to the solution of the problems confronting the teacher as he attempts to direct the growth of children toward worthy objectives. It selects from the total field of psychology those facts, those principles, those techniques that relate to aspects of child growth and development. More specifically, educational psychology is concerned with an understanding of [a] the child—his development, his needs, and his individual peculiarities; [b] the learning situation—including group dynamics as they affect learning; and [c] the process by which learning can be made more effective. To accomplish its purpose, educational psychology must maintain contact with both general psychology and educational practice. Its value in a teacher-education program will be in direct proportion to the extent to which these two are integrated.

The boundaries of educational psychology have undergone considerable modification during the last twenty years and, even today, are constantly shifting as newer emphases are placed on the various aspects of teacher-preparation and on the role which educational psychology is to play in this program. Furthermore, because boundaries are loosely defined, there is considerable overlapping between what might be considered educational psychology on one hand, and what is generally thought of as clinical psychology, social psychology, experimental psychology, and even sociology, human relations, anthropology, physiology, neurology, genetics, and psychiatry, on the other. This lack of clear-cut boundaries among the various areas of psychology and its related fields has also resulted in considerable disparity as to what is generally included in educational psychology. Most modern writers concentrate on such topics as growth and development, learning, measurements, and adjustment, but there is wide variation in the relative emphasis and treatment given such topics and even greater variation in the relative inclusion (or exclusion) of such fringe topics as grading and reporting, statistics, and individual differences.

This lack of agreement is both understandable and desirable, for educational psychology is concerned with the utilization of whatever resources the parent fields of psychology and related sciences have to offer that will contribute to the solution of educational problems. It cannot afford to refrain from stepping into what might be considered the province of other fields. Matters of boundary become relatively, if not completely, inconsequential in the light of the task of acquainting prospective teachers with whatever will help them most in understanding and in dealing with children—in and out of the classroom. In practice, of course, it is impos-

sible to cover all that is important and it becomes necessary for instructors and authors to select those phases of the total which, in their judgment, will be most helpful that they don't agree entirely is to be expected in view of what they want to accomplish and of what they feel can be covered in other courses

Sources of Data of Educational Psychology

Educational psychology derives its data from a number of sources, ranging from those that are most objective and scientific to those that are highly subjective, if not intuitive Unfortunately, except for those in the latter category, too little of the data of educational psychology has been discovered by the classroom teacher who has actual contact with the young people to whom these data are to apply A survey of the better articles written on the application of the principles of psychology to the classroom situation reveals that most of these articles have been written by psychologists and educational psychologists who have had little, if any, experience in the classroom Too often the teacher's preparation has been oriented toward *methods* to the neglect of training in the area of the psychology of the child and of research methods—to the point that he has neither a theoretical nor a procedural framework from which to investigate better ways of dealing with children Besides, his busy schedule very often allows for nothing more than routine teaching Thus, too frequently, the classroom teacher goes on solving vital problems on a common-sense basis while, at the higher levels, college professors write articles in professional journals—which teachers don't read—on problems which teachers don't have

EDUCATIONAL EXPERIMENTATION

Foremost among the sources of the data of educational psychology is experimentation, which is the basis for all scientific work Many of the current classroom practices such as the emphasis on the periodic reviewing of material in order to prevent forgetting have a relatively sound empirical basis in scientific experimentation carried out either in the classroom setting or under conditions of strict control in the laboratory and later verified or amended for use in the school situation

Experimentation in education, as in other fields, rests upon the assumption that there exist invariant relationships between certain antecedents and certain consequents so that, provided a given set of con ‾

tions prevails, if one does *this*, then *that* will follow Thus, under usual conditions, throwing an object out of the window of a tall building will result in its falling down with accelerating speed And this would be true today, tomorrow as it was yesterday, and would be true in America as well as in other parts of the world That such an invariance in time and space should exist seems logical since denying its existence would mean subscribing to a view that all is chaotic and unpredictable

Yet, at times, exceptions occur many is the farmer in the Midwest who has seen his hat fly upward in a twister and been thankful it wasn't his barn In such cases, it is obvious that certain unusual conditions have acted to overcome the law of gravity and that the law of gravity still expresses a relationship which is quite valid provided we state the conditions to which its validity is restricted

Likewise in the field of education, experimentation has produced a number of generalizations, principles, and laws which are valid *under certain stated conditions* The beginning student in educational psychology, looking for quick answers, is likely to be frustrated at the number of contradictions to be found with regard to a given problem Thus, one investigator finds Method A superior to Method B with regard to a given outcome while a second investigator finds Method B superior to Method A The apparent contradiction can, of course, be explained in terms of the differences in the conditions under which each of the conclusions was reached For instance, whereas a certain method of study might be superior to another for children in the primary grades, the reverse might be true for high-school seniors Similarly, one would be well advised to be cautious about the applicability to the classroom situation of the results of laboratory experimentation and, for that matter, about transplanting any educational results from one situation to another

Experimentation as a scientific procedure revolves around the fulfillment of the conditions of Mill's Canon of Difference [267]

> If an instance in which the phenomenon under investigation occurs, and an instance in which it does not occur have every circumstance in common save one, that one occurring only in the former, the circumstance in which alone the two instances differ is the effect, or the cause, or an indispensable part of the cause, of the phenomena

Thus, in an experiment, the investigator tries to have a *control* group which is identical in all—at least in all relevant—respects to the *experimental* group except for the one factor under study Failure to establish equivalence between the two groups would, of course, tend to make for

erroneous conclusions For example, if Group A is somewhat more highly motivated than Group B, the former might make gieater progress even while using an inferior method of study

Because educational psychology has to deal with children and material infinitely more complex from the standpoint of interaction than that studied by the chemist or other physical scientist, the problem of establishing rigorous equivalence of the two groups is a difficult one—hence the correspondingly greater danger of erroneous conclusions and gieater likelihood of conflict For that reason, psychologists sometimes prefer experimentation in the laboratoiy where they can exert a greater degree of control on the variables of the situation IIowever, to the extent to which this greater degree of control is a depaiture fiom the real situation to be found in the classroom, the results and conclusions may apply only to the situation under which they weie deiived—the laboratory setting They may provide the investigatoi with hypothtses as to what is likely to occur in the classroom but these would have to be verified under actual classroom conditions before they can be accepted with confidence by the teachei

Among the many variables difficult to control, probably none is more troublesome from the standpoint of scientific experimentation than that of the contiibution of the teacher to the effectiveness of a given method Thus, a teacher might find a certain method suited to his personality, his style of teaching and/oi the nature of the classes which he teaches— even though foi the average teacher the method may have seiious limitations In othei woids, the teachei s personality, his expeiience his competencies, and othei chaiacteristics, as well as the natuie of the students being taught, constitute vaiiables that have to be considered in geneializing whethei one method oi anothei is the more effective. The question that must be answeied is not "Which is the moie effective of the two methods?" but rathei 'Which is moie effective for whom and under what conditions?" Thus, even though method is subject to scientific law, it is often a matter of selecting method on a peisonal rather than a general basis In fact, many times we really don t know what is best And we, as educational psychologists, need not be ashamed to admit that fact The important thing is that we continue to make progress in our search for more effective ways of doing what we have to do

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Not only is it true that because of the relative impossibility of controlling all relevant variables, experimentation in the field of education has pioduced conflicting results, but it is equally true that many prob-

lems faced by the teacher in the classroom are of such a nature that they cannot—at least for the present—be subjected to scientific study Much of what is involved in an emotion, for example, is not *now* amenable to experimentation As a consequence, much of what goes on in our present-day classrooms is based on nothing more than general consensus or even personal experience and opinion that such a procedure is generally effective or that such and such is taking place Likewise, much of our knowledge of the child has been derived by means of methods which are essentially *clinical,* if not casual, in nature

Observation is probably the most subjective of the sources of data in educational psychology It is also one of the most frequently used, in fact, it is often the only means whereby certain information can be obtained The alert teacher, for instance, is bound to notice that certain techniques are generally effective, that children at certain ages display certain behavioral tendencies On a more elaborate scale, Freud, as a result of his clinical experience, became convinced that sex was at the root of much maladjustment in our culture This view was later accepted by other clinicians and used by them as the basis for understanding the behavior of their patients Likewise, as a result of their experience, teachers very often adopt a theoretical framework on the basis of which they attempt to understand children and their behavior A teacher may, for example, believe that acceleration—or retardation, or ability grouping—is detrimental to the maximum growth of the child Unfortunately, observation is subject to considerable error and, unless a person is trained to make his observations objective and scientific, he may be led to erroneous generalizations There is, for instance, a danger of slanting observations to fit preconceived theories and to note only those instances which are in agreement with one's own viewpoint

One of the most obvious ways of increasing the dependability of observation as a source of data is to increase the number of observations made, especially if it involves different observers This is essentially what is involved in anecdotal records in which each teacher jots down significant observations regarding a given child, e g, "John became very argumentative in the social-studies period today when other members of the class did not agree with him that foreign aid is a total waste of the American taxpayer's money" Whereas such notes are primarily oriented toward the understanding of the behavior of a given child and will be discussed in that context in Chapter 16, they can also lead to generalizations regarding the growth and development of children in general thus, clannishness might be found to be typical of teen-agers An extension of the clinical method is the case study in which a team of observers—

including perhaps the psychiatrist, the psychologist, the physician or nurse, the teacher, and the social worker—pools its knowledge and experience toward the understanding of a given child The case study as a method is also oriented toward an understanding of an individual child but it can provide the basis for generalizations relating to children, particularly in the area of personal and social adjustment

Another important source of the data of educational psychology involves questionnaires, inventories, scales (including sociometric techniques), tests, and other instruments by means of which the status—and often the growth—of children can be determined Some of these, such as measures of height and weight used in establishing physical growth norms, can be very accurate Others, on the other hand, such as questionnaires relating to attitudes or motivation are relatively less dependable—although nevertheless still useful in providing insights into human behavior Somewhere between these two extremes lie tests of intelligence and of achievement which, despite their imperfections, not only yield information useful in dealing with children as individuals but also provide the means whereby experimentation on various aspects of child growth and of teaching methods is made possible Thus, intelligence tests, besides having made possible the discovery of the pattern of mental growth, have allowed us to understand some of the problems involved in other phases of child growth such as academic progress and have enabled us to carry out experimentation in the relative effectiveness of teaching methods

These are the major sources from which we have been able to discover a rather creditable body of data which provide a psychological foundation for educational practice There are still a number of gaps in our knowledge In fact, we are lacking not only the answers to many of our problems, but we are also lacking in the techniques and tools whereby the answers can be obtained Particularly lacking in the establishment of education as a science is a unifying theory, such as that found in the physical and biological sciences, which would not only provide the basis for interpreting the data obtained from research but also a framework to guide our efforts in the discovery of new data Actually, a number of relatively complete and self-consistent theories have been advanced This text will not cover the topic Not only does it appear unwise to include a discussion of the fine points of distinction among the many theories in an introductory text, but it also appears relatively unnecessary Each is attempting to provide a theoretical framework in order to explain in a unified manner the empirical data of educational psychology and, whereas some theories appear to provide a more logical explanation

some of the data, none of the theories in their present form is satisfactory in all respects Furthermore, whereas the theoretical justification would differ from theory to theory, there is no appreciable difference in the pedagogical implications of the various theories and, for the present, it appears wise to choose a middle-of-the-road position and to select from the various theories those aspects which seem to make the best logical and pedagogical sense

Gains to be Expected from the Course

PURPOSE OF EDUCATIONAL PSYCHOLOGY

The placement of any learning experience into the curriculum implies that such an experience can be of major benefit to the student This is particularly true in the case of a compulsory course such as educational psychology which is probably, in some form or other, a requirement in every teacher-education program The specific gains to be derived from such courses are, of course, difficult to list in view of their lack of uniformity in nature, content, and scope It might, nevertheless, be well to explore, at least in a rough way, the role educational psychology is to play in the preparation of teachers—and, indirectly, in the education of children

The school is often blamed for whatever goes wrong in our society—delinquency, divorce, and even failure to put Sputnik into orbit Whatever the validity of these criticisms, they are not aimed primarily at educational psychology for it is not the function of educational psychology to define the goals for which we ought to strive Thus, whether the goals of the school are to indoctrinate children with social theories, to turn them into small adults, or simply to let them be carefree youngsters—these are matters that revolve around the philosophical viewpoint of the social order Educational psychology is more concerned with the discovery of techniques by means of which these goals can be attained most effectively It can, of course, lead to a reconsideration of these goals through demonstrating that they are impractical or impossible of attainment or that the procedures and techniques by means of which they are allegedly to be attained are based on theoretical considerations which are in violation of accepted psychological principles Thus, educational psychology and educational philosophy play complementary roles in the education of the child, a fact which will become more evident as we consider the various topics of the course

More pertinent to the area of educational psychology is the criticism that our schools are relatively ineffective, that children sit by the day working at half steam, being led under duress toward goals that have not been made either meaningful or desirable, being subjected to competition and examinations, which only serve to debase their sense of worth and promote their maladjustment Unfortunately, these criticisms are partially true for a number of the classrooms in our country and only too true for a sizable minority of these classrooms Perhaps the goals selected by educational philosophers and the curriculum through which these goals are to be attained are so unrealistic that they cannot be made meaningful to a large number of children But, whatever the reason, it is in the improvement of the situation that educational psychology can be expected to make its greatest contribution

The purpose of a course in educational psychology is to promote a greater understanding in the prospective teacher of the principles underlying the task of guiding children toward maximum self-realization Accordingly, the course is as crucial in a teacher-education program as physics is to engineering or anatomy is to medicine Specifically, its function, as we have seen, is to promote greater understanding of the learning process, of the learning situation, and of the learner, not singly but rather in dynamic interaction for they cannot have meaning apart from such interaction Of these areas of emphasis, that of understanding the child is the most difficult to achieve and often the most neglected It is also the most important, a point well brought out in the report of the Committee on the Contributions of Psychology to the Problems of the Preparation of Teachers [71]

> Basic in any program for the preparation of teachers must be a thoroughly scientific, broad, and insightful understanding of development in childhood and adolescence The past mistake of education was that it was subject-centered rather than child-centered—a trite statement, but still all too true of practice
> Mastery of subject-matter, the teacher naturally must have but understanding of the child is clearly more vital .The teacher must be familiar with present knowledge regarding growth in physique, intellect, interests, emotions, attitudes, character traits, social adjustment—and the influences affecting these developments But this knowledge must not remain abstract and depersonalized It must function to .give sympathetic understanding of children as developing organisms in dynamic interaction with their environment and show how such development may be most wisely and effectively guided and stimulated

Knowledge of educational psychology will not guarantee a good teacher, but without it teaching is simply a case of rules of thumb, routine habits, and trial and error In the area of discipline, for example, a person untrained in educational psychology may settle the problem behavior he encounters on the basis of such expediency as autocratic control and probably worsen the situation by promoting apathy and hostility among students

An understanding of the subject will, on the other hand, put the teacher in a better position to decide what can be done and how, what can't be done and why It will give him a clearer perspective as to what constitutes realistic goals for the child in his present state of development and how he can be helped in achieving these goals Thus, for example, an understanding of educational psychology should enable the teacher to do a more effective job of gearing the curriculum to the needs, goals, and purposes of individual children in his class and to avoid much of the difficulty experienced by many teachers in the past who operated on the premise that children should adapt their needs and goals to the curriculum as set by the teacher In short, an understanding of educational psychology should increase the effectiveness of the teacher in helping the child to make the maximum progress toward the realization of his capacities and—no less important—should result in a reduction in the amount of frustration for teacher and pupil alike Also, it should make the tasks of teaching and learning more effective and pleasant

Unfortunately, procedures that are psychologically sound are sometimes more difficult for the beginner to use effectively Just as the student learning to type without guidance often settles for the hunt-and-peck approach, so in teaching the beginning teacher is often tempted to use threats of detention, failing grades, and other forms of punishment instead of something more constructive from a long-term point of view Furthermore, as we have seen, there are times when the best procedure for a given situation is not clear As a result, the new teacher is often befuddled to the point of being willing to grasp at any method regardless of its effectiveness

Actually, psychology is better at telling what not to do than it is at telling what to do Laymen are often annoyed at what they consider our evasiveness when we answer "it depends" to their question as to what should be done about a given child or what is the most opportune age at which to introduce a certain academic task Educational psychology does not provide the teacher with a Geiger counter by means of which he may know when the child is ripe for a given activity, all it can do is to

make him aware of and alert to the principles on the basis of which sound decisions can be made

Probably one of the most effective ways of gaining an overview of the possible benefits to accrue from a course in educational psychology is to consider the objectives of such a course Obviously, as in the case of any course, the objectives vary from college to college, from instructor to instructor, and even from year to year Nevertheless, since teacher-education programs almost invariably include a course in educational psychology as part of the sequence of professional courses, it is logical to expect a certain degree of agreement as to what is hoped will be accomplished by the requirement of such a course Thus, despite the·variance to be expected in the specific objectives and the content and approach through which these objectives are to be attained, there is agreement as to such objectives as the promotion of a greater degree of insight into the principles of growth and development and into the psychodynamics of human behavior In fact, even though the exact formulation and the relative degree of emphasis vary, there is probably considerable agreement on specific objectives such as those listed below

[a] Functional information and understandings

1 Insight into the psychodynamics of human behavior, including one's own dynamics as a prerequisite to understanding children

2 Insight into the full meaning of the principles of educational psychology not as rules to be committed to memory but as effective tools to be used in dealing more effectively with children

3 Understanding of the various aspects of growth and development in their interrelationships and an understanding of the implications of environmental influences on child growth

4 Familiarity with technical vocabulary leading to a greater ability to understand the professional literature, to communicate with other members of the profession, and to reason more effectively in connection with professional problems by virtue of improved language tools

[b] Skills and abilities

1 Ability to integrate the facts, principles, and techniques of educational psychology into a functional program at the performance level thereby leading to a gradual increase in the maturity of the prospective teacher as well as to his proficiency in implementing what is learned into effective techniques for dealing with children and co-workers

2 Skill in the selection, construction, and/or utilization of whatever instruments and techniques are appropriate for the appraisal and understanding of the child and for the measurement of his all-round growth

3 Ability to coordinate the efforts of the school with the principles of maturation as a means of promoting the maximum growth of the child

4 Ability to create and to maintain a classroom atmosphere conducive to the maximum self-realization of both his pupils and himself

5 Ability to inspire children to their best effort through the relating of desirable goals to their purposes and needs and through the translating of curricular content into realistic and challenging opportunities for growth

6 Skill in the reading of professional literature as a means of maintaining professional growth, thereby leading to ever-increasing effectiveness in dealing with children

[c] Attitudes, interests, and appreciations

1 An appreciation of the child as a growing organism coupled with a deep conviction of his worth and dignity and an unlimited faith in his capacity for growth

2 An appreciation of the uniqueness of the individual child and a willingness to make whatever adaptation in curriculum and methodology seems called for from the standpoint of his best interest

3 A sense of responsibility for the all-round growth of the child and an appreciation of the effect of various educational influences—including the teacher's own personality—in promoting or impeding such growth

4 Pride in the teaching profession and a dedication to the principle that 'the child comes first"

5 An attitude of professional alertness leading to a' constant quest for better ways of serving children and to a refusal to be guided by routine and expediency at the expense of their welfare

6 A critical and open-minded attitude toward methodology and an appreciation of the role of research in the improvement of education

7 An increased interest in the psychology of the child and its application to the classroom

These objectives can, of course, be formulated differently and many others can probably be added It is also true that appraisal of the progress of students toward some of these objectives may be difficult and even relatively impossible Thus, since he may not have access to a classroom, it may be difficult to appraise the extent to which the prospective teacher

is able to translate what he learns about children into effective ways of dealing with them However, whether or not it can be measured while the student is still enrolled in the course in educational psychology, it is nevertheless a worthy and valid objective of such a course a student who has such a course should be able to deal with children more effectively during his internship period and the years to follow—or the course has been a failure In the same way, it is especially difficult for the instructor— and even for the student—to appraise progress toward the objectives in the third area (attitudes, interest, and appreciations) and yet, these are among the most important objectives of a course in educational psychology Furthermore, it is not expected that the prospective teacher will achieve a complete realization of these objectives but rather that he will make some progress toward them At any rate, whether attainable or measurable, these are among the possible benefits to be derived from a conscientious attempt to learn educational psychology

What Is Teaching?

EMPHASIS UPON GROWTH

Certainly among the more significant of the recent changes in educational thought as it applies to teacher-education is the shift in emphasis from techniques of presenting subject matter to that of directing the growth of the child The most important thing—if not the only thing— that goes on in the classroom is learning, not teaching Teaching is useful only to the extent that it facilitates learning As Dewey suggests, a teacher can no more teach without a learner than a seller can sell without a buyer

Psychology makes very clear the fact that the child must do his own learning, no one can do it for him Thus, all education is *self-education* This does not mean that teachers, as a professional group, have outlived their usefulness an l their only *raison d'être* is to act as custodian for children while they learn, much as cowboys ride herd over cows while they graze Teachers still have a definite positive and active function to perform with regard to the learning of the child Theirs is the task of stimulating and guiding his learning so as to assure his attainment of socially approved goals in the most efficient way possible

This new concept of teaching has made the work of the teacher considerably more challenging but also more difficult instead of having to concern himself only with a few patterns of effective presentation of

subject matter, the modern teacher's responsibility is one of assuring himself that all that goes on in the classroom is of maximum benefit in promoting the all-round development of the child According to the criterion of effective teaching which characterized education years ago, the teacher's knowledge of his subject and of methods of effective presentation were of fundamental—and exclusive—importance According to our modern concept of teaching, these things are still, essential and any attempt to minimize their importance would obviously be misguided, but learning is now a dynamic and continuous process involving all phases of child growth and development, so that other considerations have become equally if not more fundamental

Briefly stated, the teacher's task centers around [a] orienting the child from the standpoint of direction and motivation toward desirable goals, both immediate and long-range, [b] facilitating his attainment of these goals through the introduction of suitable learning experiences, and [c] attending to the more personal aspects of his total growth, e g , attitudes, values, and personal adjustment These tasks are highly interrelated and none can be considered apart from the others, modern education is based on the tenet that it is impossible to affect one aspect of the child's growth without affecting him as a whole The older concept of education was obviously in error in overemphasizing academic development—often with detrimental effects upon the other equally, if not more, important aspects of his growth

WHO SHOULD TEACH? ,

Because of the importance of the teacher in promoting the maximum development of the child, the problem of who should teach has received considerable attention in recent years Although the problem is certainly far from being solved, it is generally agreed that ability to deal effectively with children requires that the prospective teacher have certain personality characteristics and that he be given training along lines that will enable him to make more efficacious use of his capacities in helping them Teachers are both *born* and *made* First, it is a matter of selecting, as prospective teachers, students of high ability and sound personality adjustment who have an interest in, children, then providing them, through course work and practice, with a knowledge of·subject matter, an understanding of children and of the, techniques by which they can be helped to attain the highest degree of self-realization

No one expects teachers to be perfect they are, after all, human But society has the right to expect a certain effectiveness in promoting the purposes and objectives for which teachers and schools exist Certainly

there are always teachers who are far more effective than others And there are some teachers whose over-all effect upon the children placed in their care is essentially negative—or at least, the growth they promote in some children or in some aspects of the development of a certain child is, it appears, outweighed by the harm they do in other respects The prospective teacher should thoroughly consider the question "What makes me think I will make a good teacher? Or even an average teacher? Or more specifically, "What assets, what personality characteristics, what training do I bring to the teaching situation that will enable me to do an effective job?" These questions are not raised with the idea of creating doubts in the minds of teachers-in-training but rather with a view to having them appraise—or reappraise—their suitability for the teaching field Not only is it in the best interests of hundreds of youngsters that those unsuited to teaching be guided away from the profession, but it is also in the best interests of the individuals themselves

While it is easy to point out that children deserve good teachers, it is considerably more difficult to pinpoint the characteristics that make for effectiveness in teaching [22] First, it might be repeated that knowledge of subject and proficiency in teaching, while essential, are not generally the prime determinants of teacher efficiency and success In such studies as that of Witty [423], proficiency in teaching was listed as 12th among the traits mentioned by twelve thousand children describing the teacher who had helped them most This and other studies suggest that the type of person the teacher is and his effectiveness in dealing with children on a personal and group basis are generally—at least in practice—more basic determinants of teacher success than is knowledge of his course or ability to follow a lesson plan [1] Likewise, from a negative point of view, inability to promote a healthy and enthusiastic classroom atmosphere might be considered a more serious shortcoming than inability to solve a problem in algebra or to recall the capitals of Europe On the other hand, competence in the area of subject matter and teaching skill must not be minimized not only are they of first importance in and of themselves but, since teaching cannot be broken down into neat distinct and independent compartments, failure in these areas will almost inevitably reflect itself in frustration on the part of both pupils and teacher Any desirable personality characteristic the teacher might have probably would not last long under those circumstances

It is impossible to enumerate in isolation the characteristics and

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[1] This may be an indication of the greater ability of colleges to screen out students on the basis of academic knowledge and teaching ability than on the basis of personality adjustment

competencies that make a teacher effective effectiveness is an aspect of
the total personality that characterizes a good teacher Empirical evidence
(such as that noted in Witty's study) and observations by administrators
emphasize personal characteristics which promote pleasant pupil-teacher
relationships Included in this category might be mentioned emotional
stability, a good disposition, a democratic and cooperative attitude, kind-
liness, consideration, patience, humor, and fairness These are obviously
related to each other and assume teachers who understand and respect
children and who approach teaching with enthusiasm It might also be
pointed out in passing that, although teaching should not be thought of
as a popularity contest, good teachers tend to be popular teachers and,
conversely, unpopular teachers are almost automatically poor teachers
for they can hardly hope to reach children by whom they are disliked

Ability to establish good personal relationships with pupils and a good
grasp of subject matter and teaching methods are necessary conditions
for good teaching in fact, if interpreted broadly, they might constitute
sufficient conditions More detailed lists of teacher characteristics have
been prepared among which can be mentioned those by Crowley [81] and
by the Commission on Teacher Education of the American Council on
Education [70] None of these lists is complete and it is obvious that
teacher effectiveness calls-for more than the summation of desirable traits
Nevertheless, the following are probably sufficiently fundamental to war-
rant specific mention [a] a satisfactory level of intelligence and scholar-
ship, [b] adequate facility in expression, [c] a good background in the
psychological, sociological, and philosophical principles underlying edu-
cation, [d] a sound character, including a sense of trust and responsibility,
[e] a good level of general culture, [f] a general democratic orientation,
and [g] professional alertness and interest in self-improvement This list
may seem to be a big order to the prospective teacher who can probably
recall a number of certified teachers who are (or were) relatively lack-
ing in one or more of these traits Perhaps—yet let it stand the fact that
no one possesses all the desirable traits does not take away from their
desirability

•   *Teaching as a Science*

The question is often asked as to whether education—or teaching—is
a science If we accept as criterion, the definition of science in terms of
scientific method, the teacher would be a scientist to the extent to which

he approached in a scientific way the problems he encounters in the des-
patch of his responsibilities According to this definition, for many teach-
ers, teaching appears to be more of a trade than a science It would also
follow that teaching would be a science to the extent to which the teacher
is conversant with scientific principles as they apply to his work and is
willing to analyze classroom problems in the light of these principles
Thus, the teacher who has nothing more than a bag of tricks and rules
of thumb which he uses over and over again regardless of their appro-
priateness to the situation could hardly be called a scientist

Teaching is also considered to be an art This term has two shades of
meaning which are pertinent here [a] Art in the sense of artisanship or
craftsmanship, relying on stock methods which enable the craftsman to do
acceptable work on a standard job This is the very antithesis of being a
scientist and it cannot be satisfactory in a teaching situation since there
are no standard jobs in teaching—or, as stated by Frank [119], there can
be no routine teaching, for teaching is never routine there can only be
routine teachers Yet many teachers operate like craftsmen They simply
teach as they were taught some twenty years ago by a teacher who, in
turn, borrowed his techniques from *his* teacher In this, there is stability
and, for some teachers, security But it smells of stagnation If psycho-
logical science has brought to light new facts and new techniques, these
ought to be reflected in classroom procedures and there ought to be some
improvement in teaching methods over the years [b] Art in the sense of
creation The artist who is familiar with many techniques and who knows
how to produce the desired results in the most effective and efficient
manner As applied to the teacher, this implies a number of effective
techniques used judiciously and appropriately after a careful considera-
tion of the individual case Good teaching must be both a science and an
art in this sense of the word It calls for the skillful use of appropriate
pedagogical techniques selected on the basis of an intelligent under-
standing of their strengths and limitations and of the scientific principles
underlying the problems at hand

HIGHLIGHTS OF THE CHAPTER

This chapter serves as an introduction to the rest of the text and an
orientation to the field of educational psychology The major ideas cov-
ered may be summarized as follows

[a] Educational psychology is that branch of applied psychology

which is concerned with the application of the principles, techniques, and other resources of psychology to the solution of the problems of the classroom As such it is of fundamental importance to the work of the teacher, and teacher-preparation programs, almost without exception, incorporate some credits in educational psychology as part of the professional preparation for teaching

[b] Whereas the boundaries of educational psychology are far from being clearly demarcated from those of certain other subject areas, most courses on the subject are oriented toward the attainment of such objectives as promoting in the prospective teacher a greater insight into the psychodynamics of human behavior, a greater understanding of the principles of growth and development (including learning and adjustment) and providing him with the skills and attitudes whereby he can translate his learning into effective teaching procedures

[c] The two important changes which have taken place in teacher-education during the past few decades, namely, a change in emphasis from teaching to directing pupil growth and from the academic to the all-round growth of the child have made the role of the teacher more crucial as well as more complex than ever before Hence the need for care in the selection of prospective teachers

[d] In view of the special importance of the personal aspects of pupil-teacher relations, it is highly desirable that teachers be emotionally stable, that they understand and respect children, and that they be democratically oriented This not to minimize the importance of their more academic and professional qualifications which are also essential

[e] Teaching can be either a trade, a science, or an art depending on whether the teacher operates at the routine level or uses imagination and ingenuity based on a thorough grasp of scientific principles and procedures

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QUESTIONS AND PROJECTS

1 Get acquainted with the library as it relates to educational psychology by locating the books listed under Supplementary Readings in the following pages Also locate in the Education Index recent articles dealing with educational psychology and familiarize yourself with some of the professional journals and with the names of current educational leaders

2 If you have access to children—in a recreation center or a camp— observe one or two youngsters who seem to present problems and follow them through the various phases of educational psychology as discussed in the text Thus, with regard to Chapter 2, make some attempt to understand the psychodynamics of their behavior, with regard to Chapter 3, make some study of their general growth pattern, and so on As you go through the chapters, you will be able to relate each bit of information to the child as a whole Not only will you find such a project interesting but it will also be extremely valuable preparation in understanding children, and will give the course continuity and meaning

3 While discussing a problem, students often bring in personal experiences Just what purpose can such anecdotes serve toward the advancement of education as a science? Can education become a scientific proposition?

4 What characteristics distinguish a good from a poor teacher? Evaluate your suitability as a prospective teacher in the light of the characteristics you listed above Analyze the factors that led you to consider teaching as your life work Do you feel your decision was wise? What are some of the contributions you feel you can make the cause of education in America?

5 Contrast some of the teachers you had in high school from the standpoint of (a) the effectiveness of their teaching procedures, (b) the emotional climate of the classroom, (c) their philosophy of discipline, of motivation, (d) their ability to deal with individual differences, and (e) their general outlook on life and on teaching as a career

SUPPLEMENTARY READINGS

Since no single textbook can ever hope to provide a complete coverage of a given course area at the college level, the conscientious student

will want to do outside reading to increase his grasp and to broaden his
view of the various topics discussed Below is a representative list of some
of the more recent texts in educational psychology in which the interested
student is most likely to find related material The list is by no means
exhaustive and the exclusion of any book carries no implication that its
content lacks appropriateness as supplemental material for the topics
covered in this text

Complete bibliographical data for each reference cited in the text
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2

The Determinants of Behavior

❦

Striving for self-enhancement is not a whim of the individual which can be suspended at the teacher's command while the business of education goes on It is the basic constant, all-pervading life purpose 'of every individual, the sole motive of his every act

SNYGG AND COMBS [354]

PSYCHOLOGY IS THE SCIENCE of behavior The primary benefit to be derived by prospective teachers taking a course in educational psychology lies, therefore, in the area of a greater understanding of what causes people in general, and children in particular, to behave as they do This chapter is devoted to a discussion of this especially important problem

The Concept of · Needs

Behavior--desirable or undesirable—does not just occur it is caused Psychologists are agreed that all behavior is an attempt at satisfying some need or a reaction to the frustration of a need In fact, the view of behavior as purposive or goal-oriented is used by Tolman [395] as the basic premise of his school of psychological thought Anderson [8], a psychiatrist, expresses, the same view in his statement that the basis of behavior is the avoidance of anxiety Only when he has some need to

satisfy does the individual act, then his behavior is oriented toward the satisfaction of that need Or to be more precise, his behavior stems from the tension resulting from the frustration of his needs and is oriented toward the reduction of this tension

The fact that behavior occurs only in response to a need does not restrict the *amount* of one's behavior, since one is besieged at all times with a multiplicity of needs, not all of which can be satisfied It does restrict the *range* and *direction* of behavior, only the most pressing needs can be considered and behavior will, therefore, be oriented toward their satisfaction Thus, in the Minnesota semistarvation study [209], the responses of the subjects were largely oriented toward food while the other needs they may have had were relegated to a position of secondary importance Research [31] has also shown that subjects give twice as many food responses before meals as they do immediately after, when their other needs become relatively more pressing In the same way, children from homes of limited financial means are found to overestimate the size of a coin to a greater extent than children from wealthier homes [48]

The importance of this concept cannot be overestimated The concept of needs—and its correlate, motivation—can be considered the key to guiding behavior It underlies every phase of human relations, whether dealing with a spouse or children at home, with students in the classroom, or with associates on the job In fact, every aspect of behavior—in the home, school, or community—can be understood only in terms of needs and their satisfaction in relation to the demands of the situation in which the individual finds himself Only when the teacher is fully appreciative of that fact is he in a position to provide effective guidance of the growth of the child

THE NATURE OF NEEDS

A number of terms are used in the psychological literature to refer to what is discussed here under the general concept of needs Even though the distinctions involved are, in some cases, rather technical and relatively minor, we need to define some of the major concepts used in this connection Let us consider the following

Need A condition within the individual that energizes and disposes him toward certain kinds of behavior Thus, because of some inner need, the individual might be led to seek food, rest, social recognition, self-esteem, and the like

Drive An organically induced need We refer to needs in the area of hunger, thirst, sex as drives

Want A condition connected with a need but generally only indirectly A person might want a car or want a piece of cake as a way of satisfying some need which could as easily be satisfied in other ways There is, of course, an endless variety of wants that could be cultivated

These and other terms of somewhat similar meaning encountered in the psychological literature will be used in this textbook to refer to conditions or states within the organism which initiate behavior We now turn to the definition of those conditions and states which lead to the termination of the motivated behavior, namely, goals or purposes

Goal The objective (a condition or state) which the motivated organism seeks to attain in order to satisfy some need Food would be a goal to the hungry individual

Purpose The condition or state which guides the individual's behavior toward the goal, e g , "I am going to eat," or "I am going to become a lawyer " Purposes imply a recognition of the need and an awareness of the goal to be attained

Classification is unavoidably an arbitrary process governed by such factors as the author's purpose and even personal preference The classification of needs is no exception Various authors have used different systems ranging from a simple dual breakdown into viscerogenic and psychogenic to others that are quite elaborate However, the end result is essentially the same This discussion will therefore ·be organized around a classification of needs into *physiological* or *psychological*

PHYSIOLOGICAL NEEDS

A number of the needs which underlie the behavior of the individual are organically induced These needs, or drives as they are often called, are sometimes considered primary in the sense that not only are they basic to the sustenance of life, but, in severe cases of frustration, they also tend to take precedence over such nonorganic needs as affection and self-esteem On the other hand, one's experience can do a lot to modify this relationship and, certainly, people have been known to starve themselves to death in order to hoard away more money—suggesting that what starts out as a relatively minor want can grow in importance to the point of overshadowing what was once a more basic need Also to be remembered is that if a need is satisfied in everyone, it becomes a common denominator which no longer functions as the basis for different behavior in different people Thus, since most people have adequate sleep, rather

rarely is it an important determinant of behavior For that reason, the fact that the physiological needs tend to be satisfied to a greater degree than the psychological, at least in our culture, means that, in practice, they are often less influential in determining behavior than are the latter which are theoretically less basic

The following is but a partial list of the many physiological needs that could be mentioned

Need for food This is one of the needs which is generally easy to satisfy in present-day America and which, therefore, tends to be relatively unimportant as the cause of behavior Its importance would, of course, be more fully appreciated in areas where famine is prevalent but, even in our schools, it cannot be ignored Children sometimes become restless and irritable in the period before lunch, especially if they have not had an adequate breakfast, and it is very probable that a certain amount of the fidgeting and even misbehavior in school is connected with the tension resulting from hunger pangs In the Minnesota semistarvation studies, for instance, the subjects were found to be highly irritable and to "blow up" at the slightest provocation   •

When a teacher suspects a child has not had enough breakfast, he should take the matter up with the parents A carton of milk in mid-. morning, as furnished in kindergarten, is, of course, a great help in such cases, there may be considerable merit in continuing the program for all children in the primary grades The teacher himself may find that a cup of coffee during his free period improves his disposition as well as restores his vitality Another problem in this area concerns the child who eats little else but candy bars and desserts Some schools have regulations to the effect that desserts can be bought only with a full meal Without commenting on the effectiveness of such a regulation from the standpoint of dealing with the basic cause of the problem, it may be pointed out that eating sweets to excess probably reflects an attempt to deal with such things as loneliness rather than an attempt to satisfy the hunger drive Education on the importance of a balanced meal together with diagnostic and remedial work in the area of personal adjustment might be effective Where groups of students are involved, a change in group goals may have to be effected

In the case where a child goes for sweets in an excessive way as a form of compensation for feelings of loneliness and of rejection, improvement of the situation may be relatively slow Occasionally a vicious circle sets in as in the case of the adolescent girl who, feeling unaccepted by others, eats candy and sweets to compensate for this rejection only to have it result in acne and obesity which aggravates her rejection by

others and often causes her to have guilt feelings over her inability to exercise self-control, thereby increasing her need for sweets

Need for water This is again a need which, in general, is easily satisfied For a person lost in the desert, this need can be of tremendous moment in determining behavior, but it tends to be of minor consequence in the usual classroom situation because it can be satisfied readily Teachers sometimes run into a problem in connection with this need when allowing one child to go out for a drink brings up the problem of everyone wanting to go out, too Actually, when such mass exodus occurs, it probably reflects restlessness on the part of the class rather than a real need for water and must be considered from that standpoint The same children will—for the same reason—crumble a piece of paper and ask to take it to the wastebasket or will break the lead on their pencil in order to enjoy a trip to the pencil sharpener Where teachers make provision for children to move and stretch and to do interesting things, they can be reasonably assured that the latter will run out to the water fountain only when they really need a drink

As children come from recess after hard play, it is understandable that occasionally they will actually be thirsty The teacher can, of course, refuse to let them out of the room and can enforce such an order But, if the need is really present, the children involved will display various signs of restlessness from fidgeting to mischief in an attempt to work off the tension arising from this unsatisfied need—unless, of course, the teacher provides another need (e g , avoidance of punishment) strong enough to overcome the first A more constructive way of handling the situation is to make positive provision for the satisfaction of their need by calling them off the playground a minute early and giving them the opportunity of having their drink before coming into the classroom The unwise teacher tries to ignore or to operate in defiance of such psychological realities as needs, the wise teacher makes provision for their satisfaction, thus contributing to the peace and quiet as well as to the effectiveness of all concerned

Sleep and rest Most children get enough sleep but occasionally a child will fall asleep in the classroom This is likely to occur especially when the task at hand is one of listening to a lecture or working on an assignment of limited interest, it is correspondingly less likely to occur when classwork calls for active participation on the part of the students Generally, there is not much that can be done about the symptoms of inadequate sleep the problem has to be handled from the standpoint of its specific cause It might help, for instance, to revitalize classroom activities and bring them more into line with student goals and purposes

There are times when the child is hardly to blame some youngsters are lacking in vitality, perhaps as a result of rapid growth or of a specific health problem, others are tired because of having to rise early in order to take care of a paper route or to get the bus for a one- to two-hour ride to school At times, parents are at fault in allowing children to stay up late to watch TV or in permitting teen-agers to have parties during the week Unless parental or community cooperation is secured, it is sometimes difficult to deal effectively with a sleeping-in-class situation Some teachers ask the child to stay after school to catch up on the work he missed while he slept but this procedure is not without dangers It does help to bring the problem to the attention of parents and, where the child has been staying up despite his parents' suggestion that he go to bed, it may produce results

The need for rest has to be considered from the standpoint of actual fatigue as opposed to boredom Actual fatigue resulting from schoolwork is probably rather rare but it can occur in connection with strenuous sports like football which may leave students too tired to study However, since football practice is generally scheduled after school, it should affect only their homework if they have any Youngsters recuperate fast and, if they have a good night's sleep, are generally as good as new the next morning Nevertheless, fatigue in school cannot be ignored, particularly in the case of children who are overly conscientious, for it may underlie the problem behavior, lack of cooperation, lack of attention, irritability, and even the defiance sometimes encountered in the classroom

Mental fatigue or boredom, on the other hand, is common, especially in the case of younger children who may find it difficult to concentrate for long periods There is, therefore, a need for short periods and for a variety of activities such as is provided by the more flexible and diversified *experience* curriculum as contrasted with the more segmented *traditional* curriculum organization And, of course, the more meaningful and interesting the project the less the danger of boredom Nevertheless, no matter how interesting the activity, there is need for a break in the form of recess or change of work Children should have a chance to release some energy, to stretch cramped muscles as well as to loosen their tongues over some thought or idea they had been holding back, including making arrangement for a meeting after school

Need for activity Youngsters need rest when tired but they also need opportunities to release energy Just watching the preschool child when he is on his own shows clearly the unnaturalness of keeping him quiet in school or church for an hour at a time. Even the older child—

and for that matter the adult—has to get up and release excess energy once in a while Again the unwise teacher tries to enforce quiet, the wise teacher builds his program around the needs of the child and aims for a fair balance between exercise and rest

Two comments relative to this need for activity warrant mention here [1] Implied in the need for activity is the child's right to relative freedom from boredom A basic characteristic of youngsters is their natural desire to grow and to learn which is reflected in the child's insistence on feeding and dressing himself as well as in his unlimited curiosity It is only when he finds that it is disastrous to fail that he begins to feel that it does not pay to take a chance, that it does not pay to display initiative, resourcefulness, and curiosity As adults, we must recognize the importance of encouraging and making it possible for the child to try things without fear of punishment or of loss of status in the event of failure [2] As one watches on the playground some of the children who don't do too much work in the classroom but who seem to be such live dynamos in sports—and the writer is not advocating an all-work-and-no-play situation for he is fully convinced of the value of play—one cannot help but wonder how much of that energy could be harnessed in the cause of the more formal aspects of education for the good of all

The need for shelter and proper temperature While this need may be very important in certain situations, it rarely poses a problem in the average classroom Occasionally, a conflict arises between the children's—particularly teen-age girls'—need for warmth and the need to wear certain clothes which 'everyone is wearing" They don't seem to be the worse for such experiences and it is usually unwise to convert such situations into crises

Sex needs This is one of the most troublesome needs in our present culture, particularly for people of high school and college age While our physiological needs for food, water, etc, tend to be reasonably well taken care of, the satisfaction of sex needs in present day America is not only controlled by social taboos but is, in effect, definitely denied young people at the time when this drive is at its peak In other cultures and in pioneering days in this country, boys and girls married in their middle teens and immediately raised a family Even in the lower socioeconomic classes today, marriage takes place at an earlier age But for those who aspire to professional status through a college education, the postponement of marriage to the middle twenties and even later very often creates a situation fraught with more problems than solutions

Furthermore, the taboos and the secretiveness which often accom-

pany the child's legitimate questions only serve to put the subject on a mystery basis and, thereby, to increase his interest When he finally gets the information, or misinformation, it is usually given by some other youngster under conditions which are very likely to warp his outlook on the subject and have repercussions on his whole life and particularly upon his later marital adjustment There is no need to accept the Freudian emphasis on sex as the cause of maladjustment to see the validity of this viewpoint attempts to ignore sex needs will tend to lead to a warping of attitudes in exactly the same way as would the persistent frustration of any other powerful need The effect of our present way of dealing with the problem of sex can be seen in the unusual interest which centers around sex stories, in the prudishness of many adults when matters of sex are discussed as well as in the high incidence of sexual delinquency, marital infidelity, and numerous other social ills It might also be pointed out in passing that, just as in the case of the person who overeats or who eats sweets to excess, sexual promiscuity very often stems from feelings of loneliness and rejection—or from a warped outlook—rather than from excessive strength of the sex drive and it seems fair to suspect, for instance, that the various escapades of the middle-aged Don Juan (male or female) probably stem from feelings of insecurity over whether he or she has any sex left rather than from excess virility

The need for more realistic sex education is fully accepted by psychologists, parents, teachers, clergymen, and, most of all by marriage counselors and juvenile court officials Henderson [173], for instance, found agreement of teachers, parents and students on the need of the school to help students get sex education But practice lags behind—and children suffer the consequence for, as the Kinsey reports [213, 214] and other studies indicate, they still get the information and many get the experience What is needed is not only frank answers to questions but a planned sequence of instruction begun at home and early in grade school and continued throughout high school Such instruction should fit the level of the child the fifth grader might be more interested in sex as an aspect of science whereas in high school a discussion of this subject should be slanted toward family living rather than toward its biological aspects

The school must also provide numerous situations whereby the sex drive can be sublimated Boy-girl contacts in the classroom in connection with schoolwork, properly chaperoned dances on school premises, coeducational sports where practical, and other nonsexual outlets all serve to keep the sex drive under control It is the writer's belief that the coeducational setting of the high school, besides promoting heterosexual

adjustment which is perhaps the major developmental task of adolescence, also decreases the severity of the problems associated with the sex drive Boy-girl friendships, and even puppy-love experiences, under the supervision of the school help to relieve sexual tensions, particularly if the school sponsors a positive program of guidance designed to promote a greater understanding of sex in its personal, social, and moral aspects In view of the extent to which the sex drive affects the personal and social life of the individual, the school must consider as one of its important responsibilities the development on the part of youth of sound attitudes toward sex There is, of course, need for a certain amount of repression of the sex drive but there is especially a need for its integration as a positive driving force within the framework of a self-concept in which sexual morality is a dominant value

The school also needs to concern itself with the personal and social aspects of sex such as dating, courtship, being attractive to members of the opposite sex, and so on Not only are these important aspects of the individual's total growth for which the school is responsible but, since problems in this area very often involve young people much more critically than does the academic menu, the school cannot afford to overlook the existence of such problems

THE PSYCHOLOGICAL NEEDS

By contrast with the physiological needs which are generally sufficiently satisfied as to be of comparative unimportance in determining what a person does, the psychological needs are important determinants of behavior because they are never completely satisfied Thus, whereas a person may eat to the point where he cannot touch another bite, he could never have all the love, the security, or the social recognition he would like In fact, since psychological needs are subject to learning, they are relatively self-perpetuating Thus, no sooner is the person happy over being promoted branch manager than he is unhappy till he becomes president of the company It is because psychological needs are relatively incapable of complete satisfaction that they are so important

Again the breakdown of these needs becomes, to some extent, a matter of personal preference Let us divide them as follows

Need for affection Everyone wants to be able to live in a relationship of reciprocal warm regard with one or more persons and the average child has at least minimum insurance against the total frustration of this need in the love of his parents and siblings Later, the love of one's family is no longer sufficient and the individual generally tries to extend his domain to include a few close friends or buddies, then a sweetheart, and

eventually a spouse and a family of his own However, it must be realized
that many children—including a good number living with their parents
—lack even a home base and feel totally unloved

Need for belonging Rather closely related to the need for affection
is the child's need to feel that he is an acceptable and accepted member
of a group Again, most children find satisfaction for this need at home
and possibly at school, either in the classroom or on the playground
However, the nature of the group in which they find acceptance is of
little importance and they can just as easily obtain satisfaction for this
need by belonging to a group of ruffians The choice of the group, on
the other hand, usually is consistent with the individual's sense of values
and therefore has a direct bearing upon his future personal and social
adjustment Adults—and particularly teachers—must, therefore, be espe-
cially careful to make acceptance by desirable groups within reach of all
children lest they look for acceptance in less desirable groups

The need for affection and that for belonging are often grouped to-
gether under the heading of emotional security, the importance of which
is universally recognized, particularly in the period of infancy More and
more, psychologists are becoming convinced that the emotional security
afforded the child in the first couple of years of life is of crucial im-
portance in determining the adjustments he makes in later years The
infant, for instance, has no way of knowing why his bottle is not forth-
coming, or why he is not picked up when he cries, he can only fear the
worst He must be able to depend on his world, to know that the people
he depends on will not let him down

Some people have the mistaken notion that giving an infant what
he wants will spoil him Such an idea is illogical it is just like fearing
that the child who is given all the food he needs will turn into a glutton
unable to control himself Experience tells us that it is the child who
never knows when and how much he is going to have for his next meal
that gorges himself for fear he may not have enough next time In the
same way, it is the child who is insecure, who is unsure of his acceptance,
that is spoiled He is desperate because he cannot depend on his needs
being satisfied and he is, therefore, demanding

Rather than making the child spoiled and unable to withstand diffi-
culty, raising him in an atmosphere of emotional security and acceptance
actually increases his frustration tolerance Moloney [269], for instance,
points to the amazing stability of the Okinawan natives who, on the
one hand, are indulged as children to an extent entirely unknown in our
culture, and who, on the other hand, were able to withstand the hard-
ships of war (including starvation) as well as typhoons and dread diseases

such as leprosy and elephantiasis with a complete absence of crime, of psychosomatic difficulties, and an almost complete absence of psychosis Before the child can afford to explore, to assume responsibility, to make a contribution, he must be secure in his feeling that, should he fail, his status is not in jeopardy He needs security within his group Once this security is developed, he can be open and unafraid of criticism or failure and, therefore, unafraid of extending his circumference Only then can he face his conflicts squarely and use his full capacities to overcome them rather than to suppress them only to have them haunt him and interfere with his efforts

Without question, *the* developmental task of infancy is the evolvement of emotional security The child needs to be brought up in an emotionally stable and consistent environment in which he experiences unconditional love and acceptance Under these conditions, he can afford to express his feelings without fear and without guilt so that there is no need for evasiveness, repression, hostility, or resentment The younger the child the greater is his need for security some people, for instance, feel that the advantages from a psychological point of view of keeping newborn babies in the mother's hospital room outweigh the possible danger of infection that is involved In the same vein, some psychologists advocate breast feeding as a means of developing emotional security in the infant however, Orlansky [287] found no difference in the security of breast- and bottle-fed babies, suggesting that it is probably a matter of the attitude and spirit involved rather than of the act itself Hospitals are, of course, fully aware of the importance of emotional security especially in the case of extended hospitalization of children in fact, the impersonal atmosphere of hospitals years ago resulted in close to 100 percent mortality among young children hospitalized for extended periods of time [18] The modern emphasis in hospitals on *Tender Loving Care* is an attempt to counteract the ill effects of the emotional deprivation of patients connected with their hospitalization

Sharp differences in personality have been found to be associated with the emotional treatment the individual receives in infancy it is believed, for instance, that the cuddling of infants leads to the development of a personality that is outgoing, generous and trusting while, on the other hand, children raised in the cold atmosphere of an orphanage are often cold and incapable of close emotional ties Emotional deprivation has repercussions in other areas of development as well Goldfarb [140, 141] found children living in institutions where displays of affection are limited to be restricted in the type of intellectual freedom which might be involved in creativity and abstraction It is also suggested by such studies

as those of Spitz [359] and Widdowson [418], to be discussed in the next chapter, that emotional well-being even exerts a definite influence upon physical growth

The importance of emotional security has led to considerable attention being focused on the status of the home Thus, a number of studies have been carried out on broken homes The White House Conference on Children and Youth of 1950 [416] noted that nearly 5 percent of children are not living with either of their parents and nearly twice that number are living with only one parent It is logical to suspect that the broken home itself is not as devastating a factor from the standpoint of the child's emotional security as is the atmosphere of emotional tension and animosity which often attends the dismemberment of a home It is also quite possible that the home in which parents are not so much married as simply undivorced may have as bad an effect, if not worse, on the child Nor does it follow that even the stable home invariably provides a secure base for the child in many homes, the child's need for security is frustrated by sibling rivalry by poor family relationships such as authoritarianism, by overstrict or overindulgent or inconsistent discipline, by overprotection, and other undesirable conditions

Studies have also been conducted on the effect of working mothers on the security of the child In one study [283] at least, it was found that better relations existed between parents and their adolescent children when the mother worked part time outside the home than when she worked full time or not at all, but interpretation of such findings would call for more information about the mothers in the three groups being compared and the conditions that led some to work outside the home Of course, the study does not imply that one way to improve parent-child relationships is to have the mother obtain part-time work outside the home it simply shows the need for caution against obvious answers to complicated problems

The child must also find security in the classroom situation There is need for a carefully planned (although not rigid) schedule in which every child has a place and for carefully defined limits within which he is to operate Limits are especially necessary in the case of the child from the autocratic home who is likely to be made most insecure by a high degree of permissiveness in the classroom [1]

Need for achievement Everyone likes to be able to accomplish what he sets out to do and to feel that his accomplishments are worthwhile This need is closely related to success, failure, and aspiration, all of

[1] Just as the child from the democratic home may be made quite anxious by autocratic control

which will be discussed in the chapter on motivation It is also closely related to such other needs as social recognition and self-esteem and probably derives a considerable amount of its potency through conditioning by reason of the fuss made by parents over the child's early achievements

Schools often make it difficult for certain children to satisfy their need for achievement For the dull child, the possibility of solving all the problems assigned, of getting good grades, or of turning out a masterpiece in English, is relatively remote It is less obvious, but nevertheless equally true, that schools often make it difficult for the gifted child to obtain a sense of accomplishment Most of the ordinary schoolwork is so infantile to him that he gets no more sense of success at getting the work done than the average housewife gets out of hanging out the family laundry What he wants is something that will challenge his abilities, that will involve real accomplishment, instead he often gets nothing more out of meeting the requirements of the school than the thought of having put in another day and having gotten closer to the day when he will be called upon to do   who knows probably more of the same! Our schools need to and can be made more vital and dynamic to the bright, the dull, and the average child   it is time for teachers to pay closer attention to the diversification of instruction and assignment so that every single child in the classroom is challenged to the level of his ability and experience Our schools need to provide in their curriculum a fair balance between ease that conveys no challenge and difficulty that frustrates

Need for independence People want to be able to govern their own lives, to set out their own purposes without interference and compulsion This is particularly true in America where independence tends to be an ideal, but it probably is relatively basic Thus, as stated previously, the young child wants to eat by himself, even the baby stiffens when held more tightly than he would like Adolescents particularly resent being pushed around And so do adults! But they seem to forget this when dealing with children, they often lose sight of their dignity and subject them to the most autocratic and even dictatorial treatment Then they wonder why so many of them rebel either openly or more subtly through noncooperation or delinquency Schools tend to be overregimented children must not come before a certain time, but must not come late, they must march into school at the sound of the bell, throughout the day they must change activity at the command of the teacher Even the play period is often organized to the point that there, too, children do what the teacher says Certainly schools cannot tolerate chaos and confusion but children do need a chance to grow! And this calls for freedom from overprotec-

tion and undue regimentation as well as for ever increasing responsibility in making and carrying out their own plans

Need for social recognition This need, sometimes referred to as the need for status or approval, concerns the apparently universal desire to feel that what we are and what we do is looked upon favorably by others As it applies to children, since so much of their life centers around the work of the school, the satisfaction of this need is largely in the hands of the teacher and other school personnel and teachers need to be aware of their responsibility in this connection This is especially necessary in the grade school where the teacher is not only essentially the sole dispenser of social recognition but also sets the pattern for other children in the class to follow

The need for social recognition probably results in large measure from the conditioning the child gets through the praise his parents confer upon him when he meets their expectations and it is, in turn, of primary importance in character formation and in the development of attitudes toward oneself It also plays a crucial role in the orientation of the individual toward socially acceptable behavior—generally with resulting benefit to both himself and society On the other hand, too strong a need for social recognition is likely to result in an enslavement of the individual to the point where not only can he not make his best contribution but he thereby, increases the likelihood of his rejection and the need for further slavish conformity as a means of obtaining approval This is particularly true of adolescents for whom peer approval becomes of such importance as to cause almost complete conformity in matters of dress, customs, etc and the more insecure they are, the more concerned they must be with the reactions of others An excessive need for approval is also generally involved in the case of the milquetoast or the "faithful dog" as well as in the compulsion even the average person has for keeping up with the Joneses On the other hand, persistent failure to achieve recognition by the "desirable elements" of the social order may lead the individual to cease striving for their approval and to show his resentment through delinquency and other forms of unacceptable behavior

Need for self-esteem The need to feel that what we are and what we do comes up to our own standard is closely related not only to the other psychological needs just discussed but also to the self-concept and the level of aspiration to be mentioned later What we think of ourselves revolves around our sense of values, our standards of what is right and what is wrong, what is adequate and what is inadequate Thus, if our past experiences have led us to prize scholarship, morality, or the social graces, to fail in these respects is bound to cause frustration of our need for self-esteem. visualize, for instance, the ego deflation attending an

episode in which the hostess has just spilled a gravy bowl into the lap of the guest of honor

An interesting aspect of the need for self-esteem is that it revolves around one's system of values which is acquired during the process of socialization by means of which society attempts to perpetuate its way of life To the extent that society is successful in influencing the child to internalize its values and standards, he becomes unable to violate the social code without automatically frustrating his own sense of self-approval, i e , generating within himself feelings of guilt To the extent, on the other hand, that society is not successful in doing this, he can violate the social code without suffering from guilt his only concern is not getting caught and, if successful in avoiding detection, he may actually feel a sense of pride and self-esteem at his cleverness It is also true that frequently conflicting social pressures cause the individual to develop a sense of values that is self-contradictory he may, for example, internalize society's disapproval of both fighting and cowardice—which may leave him little choice in certain situations but to experience conflict with respect to one, or the other of his values The effects of such conflicts upon personality adjustment will be discussed in Chapter 16

MOTIVES AS DETERMINANTS OF BEHAVIOR

The determination of behavior implies not only the energizing of the individual but also the directing of his behavior toward certain goals The energizing phase occurs through the operation of internal stimuli (We know, for instance, that hunger raises the activity level of the organism), but the development of behavior that is capable of satisfying the drive itself, involving as it does aspects external to the organism, is essentially a matter of learning A distinction has to be made, therefore, between the inner stimuli (such as the contraction of the stomach walls in the case of hunger) and the external stimuli (such as the odor or sight of food, which are instrumental in arousing food-seeking behavior) Thus, whereas inner conditions energize the individual and make him receptive to external stimuli, it is very often the latter that lead to behavior which is appropriate from the standpoint of the need involved This is particularly evident in the case of sex where sexual arousal is probably keyed to a greater extent to external stimuli than to the state of the sex drive itself, but it is equally true that appetite is often aroused more by the thought, sight, or odor of food than by actual hunger

The term *motive* is generally used to include both the inner conditions that make the individual receptive to external stimulation and the learned behavior patterns by means of which he strives to satisfy his

needs Consequently, it is probably more correct to speak of the sex *motive*, for instance, as a basic determinant of behavior rather than the sex *drive* [2] Likewise, although the discussion so far has related to motives as contrasted to drives (or physiological needs), the same would pertain to motives as opposed to psychological needs Thus, one does not seek affection but, because of his previous experiences, comes to seek the affection of certain individuals In the same way, he does not seek social approval but rather approval of certain persons and it is probably better to think of social approval as it influences behavior as a motive rather than a need

That learning plays an important part in determining behavior is also evident from a consideration of the role played in this connection by *habit motives* As a result of past experiences, including society's deliberate attempt to regiment him in its way of life, the individual emerges with a set of values that constitutes 'what is generally known as the self-concept, an idea which is of fundamental importance from the standpoint of behavior and which will be discussed at some length later in the chapter Incorporated in this concept of self are a number of dominant values and ideals but also a large system of habits which exert a strong governing influence upon his behavior Thus, a person accustomed to smoking a cigarette after dinner will have a need to have a smoke and is likely to feel most uncomfortable if he cannot do so In other words, the habit, which probably had a basis in some need at one time, now supersedes the original need and becomes a need in its own right The implications of this concept for educational practice are obvious if the teacher can encourage children to develop such habits as those of persistence, hard work, and honesty, these will become self-sustaining to the extent that they result in tension reduction But teachers must remember that bad habits—as well as desirable habits—operate as habit motives!

Satisfying Needs

Needs are reasonably specific, but the goals sought for their satisfaction vary from person to person and even within the same person from time to time Thus, hunger may cause one to seek bread, meat, or cake

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[2] In view of the general acceptance of the terms *drive* and *need* in the psychological literature, they will be used interchangeably throughout this text with the term *motive* even though at times the latter may be more technically correct

depending to as great an extent on the choice he has made and the tastes he has developed as it does on the availability of each Once he sets out to get a steak, there is likely to be some degree of involvement which will cause him to go to considerable trouble to obtain the steak despite the fact that other equally good foods are more readily available In this connection, as stated above, habits, by providing some satisfaction, play a big part in the goals selected, even to the point of having the individual continue seeking goals that are detrimental in the long run

Behavior is not a simple case of satisfying a single need At all times, the individual is besieged with a multitude of needs, on one side, and of goals through which these needs can be satisfied, on the other Since he cannot attend to all these needs nor attempt to reach all goals at once, he must, perforce, be selective Thus, at one time, he may have a need for rest but also a need for social recognition which he could satisfy through the attainment of good grades—except that the latter call for work Likewise, he may have to choose between the approval of his peers and the approval of his parents and teachers In school, the child often has to choose between satisfying his need through achievement in school work or through outside activities—and, parenthetically, too often schoolwork comes out second best to almost any competing activity from sports to just hanging around the drugstore We just have not sold our students on school activities as an effective vehicle through which they can obtain satisfaction for their needs In fact, the older they get the less they tend to rely on schoolwork in this connection except perhaps in terms of rather vague long-range goals This touches upon the subject of motivation which will be discussed in a later chapter

Whereas some of the individual's needs and goals may tend to reinforce each other—achievement generally leads to social recognition and to self-esteem—there are times when they are in direct conflict, e g , the child who has to choose between the approval of his teacher and acceptance by his peers Similarly, our values often run counter to some of our basic needs, e g , the ideal of sex morality and the satisfaction of the sex drive In fact, as we have seen, our own values may be self-contradictory, for example, the middle-class view of fighting as degrading and at the same time the ideal of bravery Generally, these conflicts are resolved by having one value of greater dominance than the others and by rationalizing the violation of the latter—often not without some feelings of guilt

Since at no time can the individual attend to any more than a small fraction of his many needs, he must always be selective—his choice of behavior being dictated by such factors as the nature of the competing

needs, the seventy of their frustration, the attractiveness of the goals as evaluated on the basis of past experience, and, of course, the reality of the situation Thus, normally, thirst would take precedence over the need for independence but, if the thirst is not too severe, the individual's behavior might be dictated by the latter, particularly if past experience has made it a dominant value in his life It would also be expected that behavior would change with time as the situation and the relative strength of needs change and as he learns new ways of satisfying them

Maslow [254] proposes an interesting hierarchy in the prepotency of needs and the degree to which the needs at each level are satisfied Starting with a classification of needs into [a] physiological, [b] safety (including routine, consistency, and security), [c] love, [d] esteem, and [e] self-actualization, he suggests that normally the individual cannot consider a given need unless the needs higher up on the scale are reasonably satisfied Thus, although certain reversals in the hierarchy may occur as a result of past experiences, he usually will not attend to his love needs until his physiological and safety needs are adequately met It follows from this arrangement that whereas the physiological needs may be met nearly 100 percent, each level will be satisfied to a lesser degree and the last on the list, the need for self-actualization, may go relatively unsatisfied This theory, then, supports the contention that the physiological needs which in our culture, tend to be relatively unimportant from the standpoint of determining behavior could become of tremendous importance in a different setting

Satisfying one's needs is bound to involve a certain amount of difficulty If there were enough satisfiers for all—if everyone could be president, rich, and married to the most wonderful person—then even the poor would have a million and all that goes with it But such ideal situations are not found generally at least, the satisfaction of one's needs is far from being automatic and assured We are constantly being frustrated by the elements such as rain and cold by prejudices, by social regulations, by personal limitations Even the taking of food is governed by numerous restrictions ranging from the unavailability of certain foods to rules and regulations dictating what, when, where, and how they are to be eaten

It is also true that certain individuals have a great deal more difficulty than others in satisfying their needs The reasons for this are numerous and varied some people are less endowed with assets than others, some have learned ineffective ways of satisfying their needs and are unable to graduate to more effective procedures Furthermore, needs have to be satisfied within the framework of the situation in which the

individual finds himself and the demands it makes upon him, and obviously some people find themselves in environments that are particularly severe or perhaps simply incompatible with their make-up In general, the more a person deviates from the average in any respect, the more likely he is to have difficulty in satisfying his needs The child who is too fat, tall, short, bright, or dull, who matures very early or late tends to have special problems Haggeity [161] found that the incidence of undesirable behavior plotted against IQ formed a sort of U-curve, that is, the frequency with which it occurred was higher for both the dull and the bright than it was for those of more average intelligence

The dull child is particularly likely to have difficulty in satisfying his needs From the first day he comes to school, he finds endless frustration If he does not achieve in the area of reading, for instance, his teacher may show disappointment and annoyance leading him to feel unloved and unaccepted, his parents may also show concern and perhaps make unfavorable comparisons with his siblings or the boy down the street ˏ Tension resulting from the frustration of these needs will force him to look for other ways in which they can be satisfied If he has assets in other areas, all may be well He may be physically superior to the other children or he may possess some skill which will give him a sense of achievement and of self-esteem as well as promote his acceptance by his peers By thinking of himself as an athlete, for instance, and rationalizing that academic work is of little importance, he can satisfy his needs though athletics and shrug off his failure in schoolwork However, to the extent that he may be relatively lacking in ability in most areas, he will find it more and more difficult to locate some way in which he can satisfy his needs and may eventually hit upon some form of delinquency as a last resort

Another group which finds greater difficulty than the average in satisfying needs is the physically handicapped Depending on the nature of the handicap, those who have this problem may encounter difficulty in gaining acceptance since they may not be able to associate with others and establish friendships through play and ordinary activities This may be especially serious in adolescence when dating and dancing become an important aspect of teen-age behavior The difficulty may be aggravated by their having remained immature as a result of coddling and unwise handling and, of course, the problem becomes more serious when coupled with other deficiencies, such as dullness, which cut off other avenues of compensation The teacher can often help them to build strengths and to accept or work with their handicaps, especially when

these center around ugliness, facial disfiguration and the like, where the attitude toward a handicap is more important than the handicap itself

Many other groups of children find it relatively difficult to satisfy their needs Among these might be mentioned [a] children whose home situation causes them embarrassment Teen-agers are particularly affected by such things as poverty, the foreign background of parents, unnecessary restrictions or old-fashioned ideas regarding dating, and generally any other factor which makes them "different," and thereby raises the possibility of divided loyalties and conflict, [b] children who have been ill for relatively long periods of time and who, as a result, have been prevented from learning effective ways of satisfying their needs, and [c] children whose parents' illness or other condition puts an extra burden on them

In all the cases we have mentioned, it should be noted that the conditions described are only *obstacles* in the path of the normal satisfaction of one's needs and, to the extent that they cut off an avenue in which these needs could be met, they force the child to look elsewhere As more of the usual socially acceptable outlets are denied the child, he is more likely to resort to unacceptable behavior Nevertheless, these obstacles are only indirectly responsible for such unacceptable behavior and many individuals with equally severe obstacles achieve excellent adjustment

THE SCHOOL AND THE CHILD'S NEEDS

The school cannot be expected to undo all the harm which befalls children and to prevent all maladjustment and delinquency Nevertheless, it does have a definite responsibility in seeing that every child gets at least a minimum amount of satisfaction for his needs Not only is pupil adjustment one of the primary objectives of modern education but the school must consider pupil needs if for no other reason than that failure to do so soon results in disruption of classroom activities and harm to other children Furthermore, it must be noted that the school is perpetually bringing into focus the degree to which children are meeting the demands made upon them Thus, the child may not know he is dull till he enters grade one but, once he enrolls the school does not let him forget it Furthermore, since so much of his life revolves around the work of the classroom, a great deal of harm can be done if it is not conscious of its effects upon him

Teachers must provide each child with opportunities for satisfying his needs in socially desirable ways The child who boasts as a way of gaining social recognition needs to be shown how he can gratify the

same need more realistically and more constructively If he has special limitations that make it difficult for him to do so, the teacher should be alert to situations in which he can gain status Thus, an overage boy might be appointed custodian of the baseball equipment or appointed to the school safety patrol Likewise, the child who misbehaves in an attempt to satisfy certain needs must be helped in selecting more acceptable and effective ways of filling these needs A good teacher should be able to find a dozen ways within the framework of the activities of the school—and even within schoolwork itself—in which this can be done A well-organized co-curricular program incorporating diversified group activities has tremendous possibilities in providing need reduction for children who find this difficult within the more restricted phases of classroom work Beaumont and Macomber [29], for instance, feel it is as indefensible to bar a student from sports because of a low academic average as it would be to bar him from geometry till his batting average comes up to par

Sympathetic understanding on the part of the teacher is essential He should realize that children do not misbehave simply to annoy him but rather because they do not know of better ways of satisfying their needs They are simply calling for help and he should consider it a challenge not an affront When children appear under tension, he should be particularly careful not to aggravate the situation but rather to provide them with the security and understanding they need It is important that the teacher know his pupils, that they be able to count on him when all others have deserted them " He should, by his behavior, convince his pupils, individually and collectively, that they are wanted and accepted for what they are, for they need this security if they are to feel free to experiment in better ways of need satisfaction This is especially true of children with unhappy home backgrounds who have to depend so much more on the teacher s understanding and acceptance It is sometimes hard to understand why certain children should have to behave as they do but, apparently, they have learned through past experiences to gain some gratification through their behavior and they may be too insecure to explore for better ways even punishment may be rewarding if that is the only way to gain attention! Thus, it is necessary to understand both the child's past as well as his present situation

The teacher is only human He too has needs to satisfy and he is in a position to attempt to satisfy them at the expense of his pupils For example, the teacher's need for status may make it rough on some of the children with a similar problem This is especially so in the case of the maladjusted teacher who has so many needs he is des-

perately trying to satisfy. Actually, in view of the mutual interdependence of teacher and pupils, an enlightened attempt at satisfying each other's needs would be of advantage to both. In this, the teacher must set the pattern

The Self-Concept

NATURE AND IMPORTANCE

An idea which has received great emphasis in modern psychological writings, particularly in the field of clinical work but whose significance has not been fully appreciated by teachers is that of the self-concept. Originally proposed by Lecky [233] and adopted by Rogers [309] as the keystone of his system of nondirective counseling, this concept is probably of equal importance in the area of education particularly in the more personal aspects such as motivation, purposes, goals and adjustment which, in the final analysis, are the foundations upon which school and out-of-school success and failure must ultimately rest. It would be well for teachers to become acquainted with this all-important idea

Lecky's basic premise is that all of an individual's values are organized into a single system, the nucleus of which is the individual's valuation of himself. As the individual undergoes new experiences and new values are submitted to him, he accepts or rejects them in terms of their compatibility or incompatibility with his present evaluation of himself. He, thereby, maintains his individuality and avoids conflict. Thus, the one fundamental need of the individual may be said to be his need to develop and to maintain a unified mental organization. The self-concept may best be considered in terms of attitudes toward oneself. Just as a person, as a result of experience, forms attitudes—such as prejudices which he not only organizes into a self-consistent system but also defends against attack, even if this calls for disregard or for reinterpretation of the evidence—so the person, also as a result of his experiences forms attitudes toward himself. All attitudes are important determinants of behavior, as we shall see, but attitudes toward self are, of course, even so much more basic than those in which the person is less ego-involved and they are, therefore, correspondingly more potent in determining his behavior

The building of the self-concept is a slow process growing out of the reaction of parents and others to the child's early behavior. It is, therefore, closely related to the need for approval and recognition and to the

need for self-esteem, i e , the individual is constantly striving to enhance, or at least to safeguard, his self-image against attack If the mother gets angry at the baby, punishes him for wrongdoings, rejects him, and emphasizes the "bad baby" aspects while she is training him, he gets to conceive of himself as bad As new experiences follow, he tends more and more to evaluate each new situation from the point of view of the generalizations already formed Thus, the school child who fails to learn a given subject and who is berated by his teacher for his stupidity gets to see the school as an unpleasant place and himself as stupid He then interprets future occurrences in the school situation in this light and gives even the most well-intentioned gesture of any teacher the "What's the catch?" reception and he rejects all new material on the prejudgment that he is stupid and could not learn it even if he tried As he becomes convinced of this, he gives his environment less and less of a chance to treat him differently and, therefore, gets more and more confirmation of his acquired opinion and forces himself deeper and deeper into the same groove

In apparent contradiction to the idea of the self are the findings of the Hartshorne and May study of deceit [168] in which no general factor of honesty was found Thus, in this much-quoted study, it was found that a child who cheated in one situation did not always cheat in another, although an outside observer might have expected him to They concluded that behavior is specific, that the individual is essentially lacking in basic momentum that would keep him within the framework of a consistent pattern of behavior—a position which is contrary to the consistency postulated by Lecky It is also a position which is difficult to accept The key to the problem lies in the fact that it is only to the outside observer that the child's behavior is unpredictable as for the child, his behavior stems from and is governed by a set of values arranged in a definite hierarchy of prepotency Thus, to use a different example, an individual might pocket money dropped on the sidewalk by an unknown person but would not think of keeping money that he knew had been lost by an acquaintance The explanation of this inconsistency in behavior lies in the fact that loyalty is an important value for the individual in question but honesty is not In the latter case, he behaves in an honest fashion, not because he is honest but rather because he is loyal and his sense of loyalty takes precedence over his interest in the money

Since most situations to which the individual must react are complex, they bring into play a multiplicity of motives and value-continua in n-dimensional space reinforcing and interfering with each other in different degrees In every case, the dominant value-obstacle-goal situation

prevails and this is logical from the standpoint of the individual But the outside observer, attempting to predict the behavior without under-standing the system of values by which it is governed, may well see nothing but chaos and haphazardness And the more different the system of values to which two individuals subscribe, the less they can make sense out of each other's behavior The average citizen may, for example, have difficulty in appreciating the standard of honor among criminals Like-wise, teachers and children from different environmental levels may be entirely confused by each other's behavior

Behavior is much too complex to be understood in terms of super-ficial traits such as honesty which are the product of multiple causation it must be considered from the standpoint of its underlying foundation Individuals are self-consistent but not necessarily socially consistent The child who cheats at one time and not at another may be self-consistent if his dominant values center around the attainment of a good scholastic record he *has* to cheat whenever the getting of good grades is in jeopardy even though he may prefer not to cheat when he is assured of a good grade without having to resort to cheating If, in his system of values, he placed honesty above having a high scholastic record he would sooner fail than cheat, although he might cheat in other situations in which the choice is between honesty and some other value which he treasures more or in which a number of values paired together might outweigh the value he places upon honesty In such a case, he would have to rationalize his dishonesty or suffer feelings of guilt In general the individual will act in accordance with his dominant values, whether or not society approves of his methods, even if he has to pay the price for his transgressions of the social code But when inconsistencies in his self-concept lead him to violate one of his own dominant values while acting in accord with some of his other values, he is in trouble from a psychiatric point of view, i e, he is in need of help in integrating his system of values so as to avoid internal conflict

Whereas the young child is relatively neutral at first as to the kind of concept he builds for himself—since he has no point of reference—he becomes progressively less free in his choice of the experiences he assimilates or of the interpretation he places upon them in order that they may be assimilated without causing confusion and conflict So each new experience is important not only for itself but because it forms the basis for accepting or rejecting future experiences As a result, the in-dividual's behavior is not governed by the physical aspects of the situa-tion in which he finds himself but by his perceptions as altered in terms of his previous experiences, and he becomes progressively more "in a

rut," depending more and more upon past habits and past patterns of behavior [3]

The self-concept has tremendous implications in terms of the development of the individual In fact, this concept stands at the core of what a person does and does not do as can be attested to by clinicians as, day by day, they deal with people who, in a desperate attempt to maintain their organization of a unified self, continue in useless and dangerous modes of behavior without being able to snap out of them The usefulness of this concept is not restricted to abnormal cases, the laws of psychology cover the adjusted as well as the maladjusted Thus, in the classroom, the boy who conceives himself as a good student cannot do poor work for to do so would be to introduce a conflict with his dominant values In the same way, the child who has built an ideal of himself as moral and righteous can be depended upon to try to live up to that ideal for to violate it would lead to feelings of worthlessness and guilt It may even cause such distress that an individual will commit suicide, as did the father in the play, "All My Sons" By the same token, the person who views himself as a slick operator has to live up to that reputation and the jailing of youthful offenders often does nothing more than to give them a view of themselves as tough—by which standard they then proceed to live. This point is well stated by Anderson [9] as follows

> The pattern of life of every individual is a living out of his self-image   People can be counted on to behave according to their own patterns This consistency is not voluntary or deliberate, but compulsive, and generally is outside of awareness

Of interest in this connection is the concept of will power often used to explain behavior as it relates to the values of the social order It is sometimes said, for example, that the person who does right exercises will power while the person who fails to do what is expected of him is said to be lacking in will power Actually, as pointed out by Jones [199], to attribute differences in moral conduct to differences in will power is to "do little more than restate the problem" In fact, such a distinction is misleading Moral conduct, like all behavior, is governed according to the prepotency of motives and values Different people simply have different dominant values and, therefore, different goals which they strive to attain with equal compulsion, be they in the area of sex or self-respect It is, of course, possible to change dominant values to the

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[a] This tendency of habits, once developed, to perpetuate themselves is referred to as "canalization" by Gardner Murphy and as "functional autonomy" by Gordon Allport

point of avoiding previous failings but that is not increasing will power it is simply substituting new values of a higher level of acceptability In fact, character formation is largely a matter of helping the child to form a self-image in which the dominant values are those accepted by society, thereby promoting in him an ability to "resist temptation" and to do what is "right" The same idea is expressed by Beaumont and Macomber [29] who state that once social approval of one's activities become the dominant need, the individual will have a "strong" character Thus, the child, the teacher, the civic leader, and the thief, all have relatively the same needs and each is striving to maintain his self-image intact they simply have different goals and display different behavior because they have different dominant values

The concept of self is not restricted to attitudes and adjustment but is as pertinent in the area of academic learning Whenever learning incorporates self-involvement, the learner has no choice but to learn if he is to avoid conflict On the other hand, as reading clinicians know, the child who sees himself as a nonreader (or nonspeller) has a reputation to maintain just as he would maintain a reputation of being loyal or honest He sees no need to improve, in fact, he does not want to improve for to do so would destroy his concept of himself and lead to conflict It is a sad truth. that many people have sold themselves the idea of their being failures or just average achievers thereby cheating themselves out of the success that could be theirs under conditions of more positive thinking The author, for example, is often concerned at the number of graduate students who enroll in his class in educational statistics fully convinced that they are mathematical morons and who then proceed to confirm their beliefs by working at half-steam or by attempting to proceed in a disorganized fashion The self-concept may also be very much involved in cases of stuttering •

In view of its importance in determining what a child will and will not do, the necessity of having children build a positive self-concept is obvious Furthermore, since the type of self-concept which the child develops is dependent to a great extent upon the way his experiences enhance his self-esteem, the reactions toward him of adults—especially adults in authority—are of special importance Yet, adults apparently on the assumption that the more vigorously they bat the child down, the higher he will bounce, often go out of their way in destroying his confidence in himself By constantly nagging and failing him they only succeed in convincing him that he is stupid, worthless, or that he is a troublemaker and lead him to proceed to confirm that viewpoint by his behavior Cultural groups also may lead to the formation of self-concepts which

interfere with the work of the classroom and, at times, even with development of behavior which is in line with the general code of society The concept of self as he-men among boys of certain environments often implies a rejection of schoolwork as sissy stuff and, therefore, inconsistent with being tough

There is need to set the curriculum more in line with the self-concept of students than it is at present Some authorities feel that the fact that boys in our schools tend to have a rougher time than girls—they fail more often, get lower grades, and get into trouble more frequently—is probably due to conflict with a masculine self-concept as much as it is to such factors as their later development As early as the turn of the century, Ayres [15] pointed to the over-femininization of our schools and the resulting difficulties it created for boys Boys are expected to be he-men, and yet the boy in grade one, as pointed out by Lecky, must stand before his companions and read in a loud voice that "the little red hen goes cluck, cluck, cluck, or something equally inconsistent with his views of masculine values" We expect boys to be rugged individualists but schools are identified with the feminine pattern of conformity and, in fact, often conformity to the habits and values which women—since many teachers are women—have found satisfying in their case Even certain subjects which they may have to take (e g , poetry, typing, shorthand, and drama) may well have an annoying tone of femininity to some boys

Along the same lines, Davis and his colleagues [86, 107, 108] present the view that we cause children from the lower socio-economic levels to underestimate their abilities by presenting them in school with material and tasks which are inconsistent with the values of their culture and failing them when, as a consequence, their work is not up to par, we lead them to believe they are failures Once they become convinced of this, a vicious circle sets in and makes it impossible for them to succeed It is also likely that report cards followed by condemnation at home actually reduces, rather than increases, academic output on the part of below average students This is especially true of children from the lower classes for whom laziness and under-achievement in school often stem from the conflict between being intelligent and not being a sissy—a conflict which can be resolved most effectively by not trying

It is a safe rule that we, as teachers, can get more out of a student—and lead him to get more out of himself—by building him up through encouragement than we can by destroying him We need to stress the positive, stress the fact that we expect him to succeed rather than give the impression we would be surprised if he did It is particularly important that the child's first attempts at a given task be successful, among his

early experiences in school, for instance, should be that of success in learning to read Of course, some degree of failure is sooner or later inevitable, but it should not be introduced too soon—nor for that matter, too often The child faced with unrealistic goals or impossible demands will either have to incorporate failure as part of his self-image or avoid conflict between failure and his idea of himself as clever by being uninterested This pattern is far too common in our schools many students who might not be able to set the world on fire but who could do respectable work if they were encouraged are forced by repeated failure to adopt an "I-can-but-I-don't-want-to" attitude they cannot allow themselves to try because they would be involved in a self-conflict if they failed after having tried Thus, a rigid "maintenance of standards" policy very often defeats its own purpose

Rarely do people concede that they are complete failures Generally, they give in on some front relying all the more strongly on other fronts to help them maintain their self-respect Thus, a child may abandon trying to become a scholar and concentrate on being an athlete He may then rationalize that it isn't desirable to be a brain, that only sissies do well in school What he is doing is building a somewhat different concept of himself to fit in with what he can do This is, of course, possible only when the self-concept is relatively unformed and when the shift is sufficiently slight to be assimilated as consistent with the current self

The child's self-image does not always agree with reality or with the adult's concept of him Distortion of reality is, of course, a potential danger in the case of all attitudes but the danger is correspondingly greater when the attitudes in question relate to the self Thus, in order to defend himself against conflict, the child may blame the teacher for his academic failure and continue thinking of himself as academically competent He may even project his inadequacies onto others and despise them while he feels superior as a result The school, by forcing the child into numerous activities by which he can evaluate himself, plays an important part in the child's formation of a self-image—although a good beginning has already been made by the time he comes to school The school ought to make sure that his self-concept is realistic so that he will avoid later maladjustment for not only must there be consistency within the self but there must also be consistency with external reality

The extent to which a person can shift his concept of self to fit the realities of the situation depends on the nature of the shift and the flexibility of the current self-image Thus, a person who views himself as a scholar and who always has thought of carrying on a family tradition of scholarship will have difficulty in rejecting scholarship to become an

athlete If, however, his parents are too insistent and cause him to feel he is disappointing them, he may welcome the shift This problem will be discussed in a later section

RELATION TO PERCEPTION

The self-concept bears directly upon the topic of perception In an attempt to avoid conflict with inconsistent ideas, one sees only what he wants to see and hears only what he wants to hear Thus, perception is selective we see only those things which are in line with our motives and goals, in other words, the external situation is always interpreted in terms of internal forces The girls in the classroom may, for instance, have much better perception of the boys than of the problems in algebra the teacher is trying so desperately to present In the same way, the hunter being chased by a bear is more likely to perceive a tree or a pond of water than he is the grass or the birds As Combs suggests [69], one has only to go shopping with his spouse to appreciate the extent to which one's self-concept determines what one perceives Furthermore, not only is perception selective, it is often definitely incorrect as a result of distortions brought about by our motives and our self-image thus, a young man who views himself as quite a girls' choice must visualize his best girl friend as pretty, attractive, sought after, and that is exactly what he sees Later, he may wonder how he could have been so blind but, by then, unless he has changed his self-concept, he is probably repeating the same error with another Our enemies are often seen as sneaky or even of a criminal type when, by objective standards they may be 'quite pas' able In the same way, our perception of the student's misbehavior is colored to a considerable extent by our like or dislike of him Our conception of Khrushchev varies considerably with whether we were born in Leningrad or in Brooklyn, our view of the Taft-Hartley bill depends also on whether we are a worker, a labor leader, a personnel manager, or an employer One study [235] has shown that, after a discussion presenting both the advantages and the limitations of communism, procommunists remembered more of the procommunistic ideas while anticommunists recalled more of the anticommunistic arguments All of which suggests that the old adage "seeing is believing," might be closer to the truth when stated in reverse—"believing is seeing"

Another aspect of selective perception concerns the situation in which a person is made anxious by the demands of the occasion To the extent that fear is allowed to continue over long periods of time or that intense fear occurs, rigidity in approach—generally known as tunnel vision or, in gestalt terminology as a narrowing of the perceptual field—sets

in, which makes him incapable of seeing or trying anything new [231] The child, for example, whose needs for belonging are severely frustrated becomes completely unable to do anything constructive and, instead, persists in antisocial behavior or in criticizing others, which only serves to accentuate his rejection He is so busy warding off conflict and anxiety that he has no time and energy left to devote to a constructive attempt to solve his problem But, since he cannot stand doing nothing about it, he continues in a way which, even though it provides temporary and partial satisfaction, is not in his best interest from the standpoint of long-term adjustment

CHANGING THE SELF-CONCEPT

An important point to consider is the question as to whether a person can alter this pattern The answer is an obvious, "Yes!" Despite the fact that the self-image tends to perpetuate itself through the selectivity it exercises over the experiences it integrates or rejects, a human being's ideas concerning himself and the meaning the environment has for him are constantly undergoing revision and reorganization Whereas older views tend to cause the rejection of new ideas which are incompatible, the new gradually erode and cause a shift in the old In the normal person, this process is harmonious and gradual but for the insecure person, it may lead to a complete disorganization of behavior to the point of making unified attack on problems impossible

A more pertinent issue therefore, is that concerning the conditions under which a person can change his self-concept The answer to this question lies in the concept of permissiveness upon which Rogers' [311] bases his nondirective counseling Thus, in a permissive atmosphere, the individual can afford to change, to reconsider perceptions and to integrate them for, under such conditions, he is free from having to cling to his values lest he be caught defenseless in the middle of a crisis Treatment of clinical cases definitely indicates that only after the client comes to see that there is no threat can he reconsider situations which he had originally rejected as inconsistent with his current self-evaluation and, upon reconsideration, organize and integrate them into his system of values, readjusting the older views if necessary

Nondirective counseling is based on the premise that adjustment has been secured when the client recognizes the inconsistent ideas, accepts them on his own, and integrates them Having accepted as his own some of the feelings, views, and adjustments that previously conflicted with his self-concept, he is free to devote himself wholeheartedly to the solution of his problems The counselor, in this situation, is convinced of the ego-

integrative forces within the individual and of the fact that therapy will be successful when the client realizes his capacity for reorganization His responsibility is that of reflecting the client's own feelings so that he can perceive them once again in an atmosphere free from threat and integrate them into a consistent self-image

THE PHENOMENAL FIELD

An extension of the self-concept which also has definite bearing upon the work of the classroom is that of the phenomenal field proposed by Snygg and Combs [354] who point out that behavior is determined not by the physical or objective nature of the situation in which the individual finds himself but rather by the field as he interprets it This has already been implied by the fact that the self-concept does not restrict our needs but does restrict the manner in which they are to be satisfied (it affects the development of motives) Therefore, the self-concept sensitizes us to certain aspects of our environment as potential satisfiers of motives as defined by the framework of what is acceptable to the self-concept

The concept of the phenomenal (or personal) field is, of course, derived from gestalt psychology and is closely related to the term *life space* which Lewin [236] uses to describe the effectual environment to which the individual responds as distinguished from the physical environment as it actually exists According to Lewin, behavior results from the interaction of internal conditions and field forces, each of which has a given attraction potential or valence strength under particular internal conditions of a particular organism as affected by the present state of tension and previous experiences Thus, the individual interprets objects and situations in terms of his 'phenomenal" goals, e g, to the crook, money is something to steal, to the miser, something to hoard, to the drunk, something with which to buy liquor Or, stated differently, he interprets things in terms of their relationship to the self and his present motives

As a result, the phenomenal field to which a given person reacts may tend to appear to the outside observer as a distortion of reality but to the individual himself it is real and meaningful, resulting as it does from his past experience Thus, the child who, given his choice, passes up expensive toys to pick a lollypop may be crazy to the observer but the child's frame of reference causes his perception to focus on the attractiveness of the lollipop while the other objects fade into the background It follows that two individuals in the same physical environment may have entirely different psychological environments

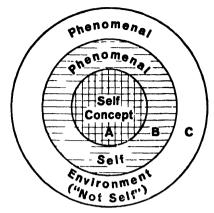The phenomenal field which governs behavior is the more personal

FIG 2 1 *The phenomenal field* After Snygg and Combs [354]

part of the total physical field in which the individual finds himself Somewhat more precise and more restrictive is the *phenomenal self* which includes these aspects of the phenomenal field which the individual experiences as part or characteristic of himself This, in turn, incorporates the *self-concept* which refers to the most intimate and personal aspects of the total situation as contrasted to the still personal but somewhat more distant factors and relationships—represented, roughly, by friends and material possessions—to which references are made in terms of *my* and *our* but which occupy a lesser degree of involvement on the part of the individual These relationships are shown schematically in two-dimensional space in Figure 2 1 A more correct view is presented by Krech and Crutchfield [220] who picture the various levels of self as layers of an onion

From a behavior standpoint, it is pointed out by Snygg and Combs that behavior is always determined by the total phenomenal field and, more particularly, by the phenomenal self and the self-concept They propose as their central theme the thesis that the individual's fundamental need is that of the preservation and enhancement of the phenomenal self and especially of the self-concept [354]

The educational implications of these concepts are of major importance To be effective, education must result in a change in the phenomenal field and the phenomenal self and, conversely, education which limits itself to the manipulation of the external environment (outside the phenomenal self) is doomed to failure Much of the trouble in our schools stems from our attempts to work at activities which do not provide enhancement of the personal self or which provide enhancement through such indirect means as grades and external rewards to the point that the

learner is ego-involved in the rewards but not in the learning As long as the curriculum—whether divided into separate subjects or integrated into a unified body of knowledge, as shown briefly here in c and b of the accompanying diagrams—remains in the external fringes of the phenomenal field, it will obviously be relatively ineffective in promoting any change in the phenomenal self Only when classroom experiences be-
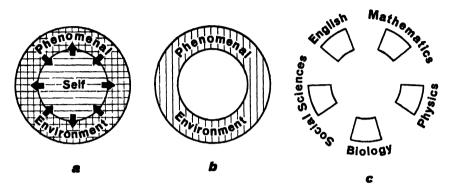

FIG 2 2 a *The phenomenal field (basis of behavior)*, b, *the phenomenal environment,* c *the curriculum (subject matter of traditional education) After Snygg and Combs* [354]

come directly involved with the self, as shown in diagram a, that is, when the individual becomes *ego-involved* in his studies, can we expect classes to be truly educative It also follows that, because the phenomenal field is organized as a unit, any learning that takes place affects the whole field A person could not, for instance, simply learn algebra without it having effects upon his attitude toward the subject, toward the other aspects of his environment, and especially toward himself Consequently, the individual can be expected to behave as a whole, to maintain functional consistency

Anxiety

MEANING OF ANXIETY

Bearing directly on the discussion of the determinants of behavior is the concept of anxiety which we will introduce at this time even though its full significance can be appreciated only in relation to other topics to be discussed later in the text Thus, even the layman is aware of the connection between anxiety and the various forms of maladjustment However, it is equally obvious to students of psychology that anxiety

relates directly to every phase of human behavior—emotions, socializa-
tion, motivation, efficiency in learning, flexibility in problem solving and
creativity—and the student is urged to keep this concept constantly in
mind as he proceeds through the rest of the course and especially as he
tries to understand the behavior of children and adults whose behavior
deviates from the expected

Tension is generated whenever the individual faces a situation in
which an obstacle prevents the attainment of his goal and the ready satis-
faction of his needs This tension is usually mild and quickly dissipated
as equilibrium is restored through the overcoming of the obstacle and the
attainment of a suitable goal However, in the case of intense or long-
continued frustration of important needs, the tension so generated may
reach such drastic proportions as to interfere with effective attainment of
the goals through which the need can be satisfied The term *anxiety* is
generally used to refer to tension of this sort, although, to be sure, there
is no sharp dividing line separating anxiety from the more normal levels
of tension, and many writers refer to all levels of tension as degrees of
anxiety

NEED FOR ANXIETY

When kept at normal levels, tension resulting from difficulty in meet-
ing the demands of a situation is highly beneficial from the standpoint
of the individual's maximum self-realization, for, without this powerful
force impelling him to regain equilibrium through the satisfaction of his
needs, he would remain forever childish, ignorant, and incompetent He
learns to achieve only when his boasting of alleged accomplishments is
no longer satisfying, just as he learns to dance only when he sees he is
missing something and he learns to read when he finds reading essential
to him in terms of status and self-respect

The crucial role of tension in promoting self-realization is connected
with any form of learning, whether in the area of social, emotional, aca-
demic, or personality development It is, of course, fully recognized in the
classroom where a certain level of tension—or, in technical terminology,
of motivation—is accepted as essential to effective learning Tension also
plays a critical role in the socialization of the individual for he learns
acceptable behavior only as a result of the frustration of his needs which
occurs when his behavior does not earn the approval of the social group
Social sensitivity is the result of learned anxiety and unless the individ-
ual's experiences lead to the development of anxiety over the possible
frustration of his needs for social acceptance and recognition he will not
learn self-direction and self-discipline but will, on the contrary, remain

essentially unsocialized, a spoiled brat with no concern for the feelings and rights of anyone but himself Likewise, a moral conscience and character develop out of the anxiety and guilt feelings resulting from failure to live up to the standards and values he has internalized in the process of socialization

However, whereas mild tension exerts a facilitating influence upon the discovery of more adequate solutions to one s problems, excessive tension, on the other hand, can be not only detrimental to such things as learning but also destructive of the individual and his self-concept Research [177, 431] has shown that the mild shocking of rats improves their learning efficiency but that severe shocks lead to a definite impairment of their learning ability and often to a disorganization of behavior To the extent to which these findings apply to the behavior of humans— and there is no reason to doubt that they do—it would seem that effective growth is best promoted when the motivational tensions affecting the individual are neither so slight as to spell indifference nor so intense as to cause anxiety

Research suggests that tension is conducive to increased activity on the part of the individual, and it is likely that in routine tasks—and particularly in routine physical tasks—strong tension may result in increased output although, since it is energy-consuming, excessive tension may as easily result in perpetual nervous exhaustion and in decreased output In the case of tasks involving flexibility, originality, and high level skills and abilities, on the other hand, excessive tension almost invariably exerts a detrimental influence upon performance, for, as previously discussed, the individual under stress is very likely to suffer from perceptual rigidity, i e , a narrowing of the perceptual field so that he cannot see effective approaches and is, therefore, likely to resort to a stereotyped repetition of errors It is well known, for example, that the more desperately in need of love the child is, the more likely he is to be incapable of refraining from being obnoxious Thus, whereas the secure child is curious and adaptable, the anxious child is rigid He stays with his ineffective adjustments simply because his anxiety does not permit him to perceive and to experiment with more effective ways—simply because his anxiety forces him to settle for immediate, although slight and temporary, relief from the tension he experiences instead of waiting for more adequate solutions at a later date Likewise, the child who is worried may be working at full steam as far as energy output is concerned but, because he is under stress, he is likely to have part of this energy expended at cross-direction to his goal so that his net and effective horsepower is often negligible This, of course, reaches its extreme form in the case of the psychotic individual in which

a complete disorganization of behavior is often seen Not too different is the case of the student who is worried to the point of being unable to concentrate, who skips classes (an unconscious withdrawal from an anxiety-producing situation), who forgets assignments, who becomes aggressive, hypercritical, clinging, or otherwise obnoxious with his instructors and fellow-students, or who resorts to such unfortunate crash grade-earning techniques as memorization, cramming, or cheating—all of which reduce rather than enhance his chance of academic success

IMPLICATIONS FOR EDUCATIONAL PRACTICE

The implications of the concept of anxiety for educational practice are so crucial and far-reaching as to warrant the most careful consideration This is not to suggest that teachers need to assume responsibility for the therapeutic aspects of advanced cases of anxiety But they do have a definite responsibility in forestalling the development of anxiety that will interfere with the growth of the child

Since anxiety implies a sense of helplessness in meeting the demands of the situation which the individual faces, the importance of building up his emotional security cannot be overemphasized This can be accomplished through providing the child with affection and consistent direction, through providing him with an atmosphere of permissiveness and unconditional acceptance in which he can experience tension at a level which is educative rather than disruptive, through ensuring him reasonable success by making sure that the demands made upon him are in line with his level of readiness Thus, the situation in which the child finds himself must be one in which demands and restrictions are placed upon him but these must be sufficiently defined so as to prevent the development of insecurity The goal of education is self-direction on the part of the child but until such time as he is able to provide his own direction in matters of study and behavior planning, adult guidance must be supplied if anxiety is to be avoided and learning is to take place Thus, the child cannot learn self-discipline when no demands, or inconsistent demands, are made upon him or when boundaries melt as he rebels against them, or when punishment is so severe as to cause excessive anxiety Actually, the teacher is in an ideal position for teaching the child self-direction Through providing him with a non-parent-connected system of approval and reproof, he permits him to experiment in meeting adult demands without suffering the strong feelings of guilt which often accompany parental disobedience Furthermore, by virtue of his being less emotionally involved and, therefore, more capable of objectivity, the teacher is better able to provide discipline in an atmosphere of objective accept-

ance in which the child can devote himself to learning instead of having to worry over mistakes, past and to come

Thus, the child's welfare is best served when the tensions with which he is faced are neither too slight nor too severe, and it is the responsibility of adults—and especially of teachers—to maintain such tensions at an optimal level In practice, however, this involves quite some doing! When one considers the wide range of individual differences in emotional security, in ability, and in experiential background, it becomes obvious that a given situation is likely to elicit different reactions from different people For example, a given assignment might mean immediate solution, little learning, and no tension (except perhaps boredom) on the part of the more capable students, an effective level of tension and eventual success for the more average child, and panic and predestined failure and frustration on the part of the duller child When the latter situation is a regular occurrence, there often sets in a vicious cucle of either indifference and downgrading of the self-concept as a protection against anxiety or mischief and group tensions, aggressions, and scapegoating as a means of relieving tension

HIGHLIGHTS OF THE CHAPTER

Educational psychology, as part of the teacher-education sequence, has no greater task than that of providing the prospective teacher with an understanding of the psychodynamics underlying human behavior This chapter, therefore, sets the foundation on the basis of which the material of this text as well as the content of other teacher-education courses can be understood Consequently, it is imperative that students of educational psychology be familiar with the following concepts

[a] All behavior is purposive It does not just happen, it occurs as a response to a need and is oriented toward the satisfaction of that need or the removal of the tension associated with its frustration

[b] The individual soon learns not so much to satisfy his needs but to do so in a given way That is, the basic determinants of behavior are not needs (which only energize the individual) but rather motives (which also provide the direction in which the energized individual is to go in order to satisfy his needs)

[c] The satisfaction of a need is not an optional matter Whereas the individual cannot expect to have all of his needs satisfied at any given

time, a reasonable degree of satisfaction for his major needs is essential to his welfare

[d] Certain individuals may experience undue hardship in deriving satisfaction for their basic needs and may resort to deviant, anti-social, or otherwise unacceptable behavior in a desperate attempt to deal with the need and its tension The school should provide guidance so that the child will find suitable means whereby he can satisfy his needs but also, at times, provide special outlets or make special provisions for him to get at least a minimum of satisfaction

[e] Needs can be classified into physiological and psychological Whereas in the case of equal frustration, the former would tend to be more powerful determinants of behavior than the latter, in the usual case in America where one's needs for food, water, rest, etc are relatively well taken care of (sex needs in young people excluded), the psychological needs, which are relatively unsatiable, assume greater relative importance in the determination of behavior

[f] The degree of anxiety generated as a result of the difficulty the individual faces in attaining his goals is directly related to the problem of his maximum self-realization Both too low and too high a level of tension are to be avoided

[g] Two ideas which are of primary significance in the understanding of the psychodynamics which underlie human behavior are the *self-concept* and the *phenomenal field* The fact that the individual's behavior will, at all times, be consistent with his system of attitudes, ideals, and values has far reaching implications for every aspect of the educative process

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QUESTIONS AND PROJECTS

1 Why is it essential that prospective teachers understand the dynamics underlying their own behavior before undertaking to understand the behavior of others? How essential is it that teachers be relatively free from an accumulation of unresolved tension? What can be done about it?

2 Discuss how needs form the basis for all learning For self-realization

3 What are some of the factors that create differences in the relative strength of the various motives of individuals?

4 Discuss the role of clothes, cars, and other material possessions in the satisfaction of needs When can such externals become a liability?

5 Analyze Dale Carnegie's *How to Win Friends and Influence People* from the psychological standpoint of needs and motives

3

Growth and Development

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Intelligent handling of children requires a knowledge of how children grow and how such growth can be influenced favorably.
BRECKENRIDGE AND VINCENT [*]

FROM A TINY SPECK at the time of conception, the individual multiplies a millionfold until at birth he possesses considerable physical development. Shortly thereafter, he begins to display definite signs of motor, emotional, intellectual, and social behavior. Those aspects of growth and development resulting from the interaction of environmental influences upon inherited potential are of special interest to teachers. If these environmental influences—foremost among which are those connected with the school—are to be effective in bringing out the potential of the child, it is necessary that they be integrated with his maturational processes.

General Principles

MATURATION AND LEARNING

The level of development displayed by an individual at any given time is the result of both the maturation of his innate potentialities and

[*] Breckenridge, M. E. and E. L. Vincent, *Child Development Physical and Psychological Growth through the School Years* Philadelphia Saunders, 1950

whatever modification of these potentialities arises from the pressure of environmental influences Whether a person is tall or short, has a pleasing personality, or achieves a high scholastic standing depends upon the interaction of the various hereditary and environmental forces which are involved in the particular case

Because of their importance and the fact that they will be used repeatedly in this text, it would seem worthwhile for students of educational psychology to obtain a clear understanding of a number of technical terms used in the psychological literature on the problem

The term *nature* is often used more or less synonymously with heredity It refers to the potentialities with which one is conceived Closely related is the term *maturation* which may be defined as that phase of development which relates to the unfolding of the characteristics incorporated in the genes transmitted to the individual from his ancestors

In contrast are the terms *nurture* and *learning* which refer to those changes in behavior which result from modification of developmental trends through environmental influences These terms are somewhat more restrictive than *environment* The loss of a limb through an accident can be attributed to environmental causes but would not qualify as either learning or nurture *Growth* and *development,* on the other hand, are more inclusive terms as they refer to the result of the interaction of maturation and learning in making the individual what he is at a given time

The two phases of growth, maturation and learning, are so closely interrelated that the influence of one or of the other cannot be isolated Thus, the short person may be short as a result of an inherited tendency toward shortness or he may be short because illness stunted his growth Inherited capacity cannot develop in a vacuum nor can it be measured except through the present state of development which is, of course, partially the result of learning If a person behaves in an unintelligent fashion, there is no infallible way of knowing whether his unintelligent behavior is the result of intellectual limitations which he inherited or the limitations of his environment in stimulating growth Only in a case where we can, with reasonable certainty, rule out the possibilities of insufficient opportunity to learn can we consider inadequate behavior to be suggestive of inherited deficiencies Thus, for someone to appear stupid in connection with a problem in advanced calculus may or may not imply a lack of intelligence depending on the individual's experience in this area, whereas inability to grasp the relationship between common ideas can more safely be interpreted as a reflection of mental inadequacies

As may be seen from the diametrically opposed views of McDougall and Watson presented in the next section, the relative effect of heredity and environment on one's present level of development has been the subject of considerable speculation and disagreement A number of investigations on the subject have been conducted, the most fruitful of which has involved a comparison of the development of identical twins under different conditions of environmental stimulation However, none of these studies has yielded conclusive evidence In fact, because of the interaction and functional overlapping of the two sets of factors, their relative role and contribution in the determination of the individual's growth and development is a matter of speculation Some of the evidence relevant to the problem will be presented in this and later chapters

THE INSTINCT APPROACH

Nearly fifty years ago, McDougall [245] attempted to explain all behavior in terms of *instincts* which he defined as rather complex behavioral patterns which made their appearance as a result of the maturation of inborn traits and capacities Thus, maternal behavior, existing as it does in nearly all women, was explained on the basis of a "maternal instinct', the behavior of a boy who bullies was explained in terms of, "pugnacious instinct' These unformed patterns were considered to be present at birth and to emerge somewhat as beard appears on a boy's face when the required maturational stage is reached

Although it is probably incorrect to deny the existence of instincts, depending on our meaning of the word, it is difficult to visualize maternal instinct developing into a completely integrated pattern solely as the result of the maturation of innate capacity Certainly, motherhood—as it relates to our present-day culture—has many aspects which are learned gradually from the time a girl is born Whether it can develop naturally without this learning is problematical Evidence against this point of view includes that presented by Margaret Mead [256] who found certain tribes in New Guinea where men did the household chores and took care of the children while the women did the hunting, fishing, and other so-called masculine tasks This may be accepted as evidence that the maternal instinct is nothing more than a cultural (learned) behavior pattern since it is not universal, it may, however, simply reflect the obvious fact that human beings can learn to conform to a cultural pattern even though it may not be normal or natural for them The wolf-girls of India were able to learn to walk on all fours despite the inherited pattern of walking upright common to humans

If the term *instinct* is used merely to refer to complex behavior

patterns that develop naturally and fully in the complete absence of learning, or that could do so, it is difficult to accept such a concept Certainly, the modern young mother has abundant opportunities to learn the essential aspects of taking care of a child, and still needs to learn many others before she feels confident in her role Furthermore, research [221] has shown that the so-called instinctive desire on the part of cats to kill rats is basically a learned reaction If the term is used to refer to simple behavior patterns such as walking, running, grasping, etc, instincts probably exist They also seem to exist in animals young geese fly south in a flock separate from the old birds and still manage to find their way Other birds migrate by night, so they could not learn their way by means of landmarks Cowbirds lay their eggs in the nest of other birds and see their young for the first time when they reach their winter homes, the young migrating with neither the foster nor the true parents In the same way, salmon go up the river to lay eggs and die, and swallows will build a mud nest typical to their species even when they have never seen such a nest Some of these instinctive behavior patterns have been partially explained in terms of their underlying cause and probably more will be explained later Evidence indicates that salmon leave the shallow rivers because they cannot stand the rays of the sun in the shallow water after the pigmentation of their skin has decreased [313] It has been shown that the migration of birds in the fall is instinctive only in a sense, that it is caused by the decreased daylight hours affecting the endocrine balance of the bird, when daylight is artificially increased, they fly north, not south [314]

These explanations suggest that there may be an innate basis to certain behavior and if the term instinct is used in this connection it can be accepted It is also possible that inherited glandular structure is largely responsible for certain behavioral tendencies (although these might be modifiable) Thus, Clark and Birch [61] found that the administration of male and female sex hormones to a male chimpanzee led to social dominance and subordination respectively It has also been shown that mothering responses can be induced in an old male dog through the administration of lactogen [110], and in virgin female rats through the administration of prolactin [1] This suggests that the behavior between men and women may stem from differences in glandular secretion at least as much as from cultural pressures In the same way, the relationships Sheldon

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[1] The injection of prolactin, one of the hormones produced by the pituitary gland, into virgin female rats causes them not only to produce milk but also to display mother love They will tenderly care for baby rabbits and even pigeons

[331] and others have found between body type and temperament might have at least a partial explanation in the glandular balance of the individual If, as research [369, 430] has shown, one inherits tendencies for under- and over-secretion of certain glands, it would follow that heredity is perhaps more responsible for emotional and social behavior than some people would be willing to concede It might even leave room for the readmission of instincts into the realm of scientific respectability

THE REFLEX APPROACH

The opposite viewpoint is that of Watson [407] who postulates that all babies are alike at birth having a certain body structure, certain reflexes, three emotions (love, fear, and anger) and certain manipulative tendencies The fact that they become different despite their uniform beginning suggested to Watson the influence of different environmental forces affecting the direction of development from this common starting point Watson represents an extreme environmentalist position which is difficult to accept certainly infants differ in such obvious things as height and weight and they probably do in terms of potentialities in various areas of growth and most students of psychology would reject his basic premise No one denies the importance of environment in promoting the development of the individual but Watson's position appears to minimize unduly the corresponding role of inherited differences

Both McDougall's and Watson's views are extreme positions which are difficult to defend Current opinion would support a more middle-of-the-road viewpoint and it is probably best to look upon heredity and environment, not as rivals, but as co-contributors to development with the relative contribution of each varying on a continuum with the different aspects of development being considered Thus, there are reasons to believe that physical growth is determined by heredity to a greater extent than is social development Nevertheless wide differences of opinion exist with respect to nearly all aspects of the whole problem

Research on the subject yields nothing definite There is evidence to suggest that the earliest prenatal behavior consists of diffuse and generalized mass activity out of which more specific responses are later differentiated and these are later integrated into rather complex unified behavior patterns But there is no way of proving or of disproving that there is an inbuilt mechanism which carries the sequence through to the end with relatively little assistance from environmental forces or that human behavior is essentially the result of the environmental influences to which the individual has been subjected since conception

Principles of Heredity

MENDELIAN PRINCIPLES

According to the Mendelian principles of heredity, the determinant of one's characteristics is the particular combination of genes involved in the fertilization of one of the egg cells of the female by one of the sperm cells of the male This provides for the unlimited differences that may exist among the siblings of a family, as can be appreciated from the fact that it takes a combination of fifty different genes to determine as simple a characteristic as the eye color of a fruit fly Thus, that one sibling is taller—or brighter—than the other does not necessarily call for an explanation in terms of differences in environment any more than does the fact that one is blonde while the other is red-headed, or for that matter, that one is a boy while the other is a girl

Genes are not manufactured by the parents but are simply transmitted by them to their offspring As a result, since some genes might not be involved in any number of conceptions, a certain characteristic may remain dormant for generations only to reappear unexpectedly in a given individual Thus, the principles of heredity possess within themselves the means of explaining a relatively unlimited range of variations that might occur in the offspring of a given couple The only exception to this lies in the case of identical twins who, having resulted from the splitting of a fertilized ovum, have identical heredity In such cases, heredity is a common denominator and whatever differences appear later can be attributed to differences in environmental influences [2]

Psychologists agree that heredity sets certain developmental limits and that these limits vary from person to person depending on the particular combination of genes involved at the time of conception What these limits are is a matter of speculation, it seems logical that, because of the construction of the human hand, it is unlikely that anyone will attain a higher speed than 200 words per minute on the present-day typewriter But who can tell? For years, it was believed that the four-minute mile was beyond reach, but now we know better A number of runners, including Roger Bannister, have been able to run the mile in a few seconds less, than four minutes and it is probably safe to say we have not yet reached the limit in running speed set by heredity There is no telling how fast Bannister could have run the mile had he devoted every moment of his life to the development of his running speed And there is possibly

[2] Differences could, of course, occur as a result of irregularities in cell division

some person in the world today who might have outdistanced him easily had he had the same training

As teachers, our views on this point are relatively important if we believe that the average person achieves a very large part of his potentialities and would do so under the usual conditions of everyday living, there does not seem to be much a person can do through systematic training such as formal education to help him, beyond having him acquire certain specific environmental skills If, on the other hand, the individual attains only a relatively small degree of his potentialities unless special efforts are made to provide him with concentrated environmental stimulation—and there is considerable evidence to suggest this to be true—the role of education in promoting effective functional behavior becomes correspondingly more important Teachers and psychologists need to be sold on the important role played by environment in the individual's development of inherited potential it is obvious, for example, that a child is not born a genius but only with the potentialities for becoming one provided certain environmental conditions are met It is also obvious that environment plays an important part in determining the percentage of his inherited potential which the individual develops and this may well make a very real difference in the effectiveness of his· behavior Furthermore—and this is important from a pedagogical point of view—even the firmest believer in the importance of heredity would concede that education may play an important part in determining the direction in which one inherited potential develops, and the use to which it is put At the same time, teachers must also be fully convinced of the very real limitations imposed by heredity, for a great deal of harm can be done by setting expectations beyond the child's capacities A realistic view as to what environment can and cannot do in overcoming inherited limitations will serve to save the child from being neglected on the basis of an 'He ll-never-make-it-anyway' approach, and from being subjected to impossible demands on the basis of a sentimental attachment to a philosophy of 'You-can-do-whatever-you-want-to-do "

Since genes are not manufactured by the parents, ordinary experiences which the parents undergo do not affect their unborn child Thus, the accidental loss of a limb on the part of the parent would not increase the child's chances of being born minus a limb, any more than he would be born any more educated as a result of the parents being college graduates An exception to this rule concerns atomic radiation there are reasons to believe that radiation may cause genes to become defective, thus leading to such things as sterility or the bearing of abnormal offspring

CHANGES IN THE BASIC PATTERN OF DEVELOPMENT

Since heredity is set at the time of conception, it might be expected that, after conception, development would tend to follow a basic pattern set by the particular combination of genes involved in the fertilization of the egg by the sperm cell Actually, a number of examples can be given of significant changes in this basic and presumably inherited developmental pattern which have been brought about by the manipulation of environmental conditions [a] A certain species of salamander, normally suited to live in water, can be changed into a land salamander by feeding it thyroid extract [413] [b] Siamese twins can be developed in fish through cold, insufficient oxygen, or ultra-violet rays [7] [c] Two-headed monsters in tadpoles and single-eyed minnows can also be produced through artificial environmental conditions [273] [d] A hen can develop such secondary male characteristics as a rooster's comb and leg spurs and become a rooster capable of fertilizing the eggs of another hen [78] [e] The development of an egg into a queen bee or a worker depends on the food it receives, and [f] if, during the formation period following conception, what normally grows into a foot is introduced into the head area, this foot material will grow as part of the head [200] It is also apparently possible to manipulate environmental conditions at the time of conception so as to produce one sex or the other in the offspring Thus, it would appear that, whereas heredity sets certain patterns of development, to some extent these remain true to form only as long as environmental conditions under which maturation is to take place also remain true to pattern

Environmental forces begin affecting the development of the individual from the time of conception And, even though the effect of such environmental forces becomes correspondingly more clear after birth, even in the womb, the neonate is far from being immune to such forces Thus, X-ray in the pelvic region of a pregnant woman can change what might have been a child of normal intelligence into an idiot Birth injuries and toxic conditions associated with late delivery may also result in feeblemindedness Likewise, German measles in the early part of pregnancy can cause drastic changes in the development of the offspring resulting in such things as malformation of the eyes, ears, and heart That the neonate is not immune to environmental influences was shown rather clearly by Spelt [358] who was able to condition certain responses in a neonate in the womb, despite its relative lack of maturation and capacity for learning   ,

Since the living organism, can learn, even relatively drastic changes

in behavior can be effected through the manipulation of environmental influences [a] Sparrows raised in soundproof cages with canaries soon abandon their own chirps and learn the canary call [72], [b] chimpanzees have been trained as human babies, and [c] the wolf-girls of India learned to live like wild beasts and were later partially domesticated [362] More commonplace but certainly no less important are the changes in behavior which result from everyday contacts with the environment such as might be incorporated under the term *education* Of course, it must be remembered that all of these changes have to remain restricted within the framework of inherited structure whereas the wolf-girls of India learned to walk on all fours like the monkeys of the jungle, they did not learn to fly like the birds

The importance of heredity in determining one's growth and development, on the other hand, must not be minimized Everyday observation provides ample evidence that tall parents tend to have tall offspring, that bright parents tend to have bright children In a study by Tryon [397], the results of which are shown in the accompanying charts, selective mating together of the brightest rats and the dullest rats of each successive generation produced eight generations later two separate distributions with almost no overlap in intelligence Similar studies also with rats have produced comparable results in the area of emotionality [164] and of activity [315] In the latter study, for example, the spontaneous activity displayed by the active group developed by selective mating was, on the average twenty times that displayed by the inactive group Likewise selective mating in horses has produced such breeds as the Clydesdale and Thoroughbreds where the fastest of the Clydesdales is probably not as fast as the slowest of the Thoroughbreds Similar phenomena have been produced in certain varieties of plants not to mention similar possibilities with respect to height, strength, and intelligence among humans [1] It is also interesting to point out in this connection that individual differences in aggressiveness in rats have been related to glandular structure emotional rats have been found to have larger adrenal, thyroid, and pituitary glands than nonemotional rats [430] This suggests that emotionality is perhaps inherited through the relative over- and underactivity of certain glands in the body, a position which is in agreement with Stockard's findings [369] that the glandular structure of dogs is essentially inherited •

The problem is, of course, extremely complex It relates, for example,

[1] One would have to exclude cripples, dwarfs, idiots, etc whose abnormalities resulted from such environmental causes as birth injuries, disease, and damage through accidents
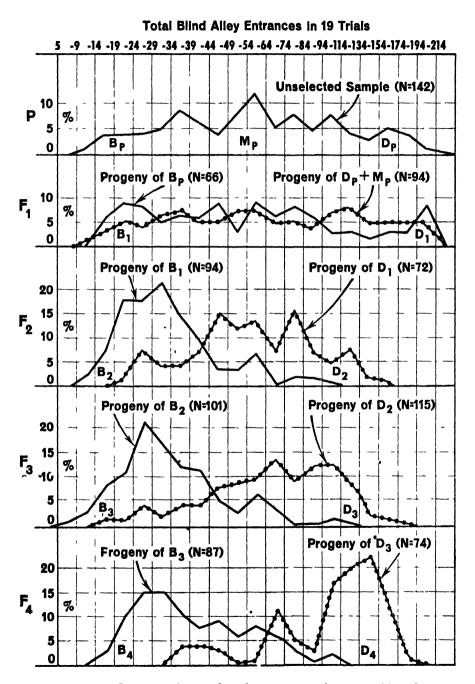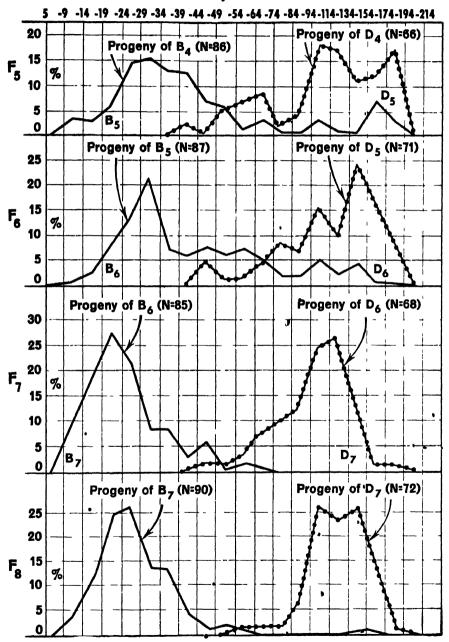
FIG 31 a *Effects of selective breeding on maze learning After Tryon*
[397]

Total Blind Alley Entrances in 19 Trials

5 -9 -14 -19 -24 -29 -34 -39 -44 -49 -54 -64 -74 -84 -94 -114 -134 -154 -174 -194 -214

Progeny of B₄ (N=86)

Progeny of D₄ (N=66)

Progeny of B₅ (N=87)

Progeny of D₅ (N=71)

Progeny of B₆ (N=85)

Progeny of D₆ (N=68)

Progeny of B₇ (N=90)

Progeny of D₇ (N=72)

Fɪɢ 3 1 b *Effects of selective breeding on maze learning After Tryon* [397]

to the effect of old style wars, of famines, and to the concept of the
survival of the fittest in bringing about an improvement in the species
It is complicated by the fact that inherited characteristics reappear un-
expectedly after having remained dormant for generations It is com-
plicated further by the concept of regression toward the mean, i e , by
the tendency for the offspring of parents superior to the average in one
characteristic also to be superior to the average in that same character-
istic but less so than were their parents Similarly, the offspring of parents
who are below average in a given trait are, as a group, less inferior in
this trait than their parents Thus, short parents tend to have short
offspring but the average height of the offspring is greater than that of
their parents The same would apply to intelligence, musical talent,
running speed, and any other trait In the Carnegie study [232], for
example, it was found that more bright children were produced by
average and dull parents than by bright parents simply because there
were more of the former On the other hand, the fact that each genera-
tion tends to be taller than the preceding one is difficult to explain on
the basis of heredity—unless one is willing to assume that short parents
do not reproduce their fair share A somewhat more plausible explanation
is that no one attains his maximum potential as set by heredity in any
phase of his development and that, as it applies to the area of physical
growth, people are becoming progressively less stunted This explana-
tion would find support in the findings that physical growth appears re-
lated to financial depressions and wars, as we shall note in the next
chapter   .

·Thus, the relative role played by heredity and environment in the
individual s growth and development is extremely complicated and no
clear-cut conclusion can be reached except with respect to its com-
plexity The problem is of particular interest in connection with intel-
lectual development, a topic which will be discussed further in Chapter 7

Principles of Development

Such a large amount of research has been done in the area of de-
velopment that it is difficult to cover all aspects of it The interested reader
is referred to such comprehensive sources as the work of Gesell [133, 134,
136], Dearborn and Rothney [89], and Carmichael [56] The discussion
in this section will be limited to an overview of some of the major prin-
ciples of development which should be of interest to teachers

[a] The development of behavior proceeds from generalized mass activity to responses that are more differentiated, more localized, and more specific Research with human and subhuman neonates [65] has shown, for example, that the earliest prenatal responses consist of a general squirming of the whole organism it is only after considerable development has taken place that reflexes and specific responses become differentiated from the total A possible explanation of this phenomenon centers around the fact that myelin, the fatty substance that surrounds the nerve fibers and insulates them from one another is relatively lacking in infancy, resulting, as it would in the case of the improper insulation of an electrical wire, in a short-circuiting of impulses into other nerve fibers and, consequently, in activity in irrelevant parts of the organism

[b] Development is a gradual process, and whereas occasional reference is made to certain stages, growth is continuous rather than made up of distinct levels or steps

[c] The rate of development varies from child to child but the sequence is uniform Thus, in physical growth where the pattern is more obvious than in the other aspects, there is no question but that some children grow at a much slower rate than others However, complicating the picture is the fact that whereas the short child tends to remain short throughout his development this is not always so, nor is it true in other aspects of growth The Harvard Growth studies [89], for instance, found certain children with a fairly constant rate of development, but also other children who were highly variable, the authors concluded that physical and mental growth are essentially individual affairs, and that it is impossible to predict with any reasonable degree of accuracy the terminal development of a child from early developmental patterns They also noted that no two cases had exactly the same developmental history It follows from this discussion that the typical growth curve, being an average of the growth patterns of many children, has relatively little meaning for the individual child

Although the rate of development varies from child to child, the sequence of development is relatively uniform Thus, the child crawls before he walks and walks before he runs In one study [335], a correlation of 93 was obtained between the order of appearance of forty-two motor activities in each child and the average order of appearance for the group This uniformity in sequence has a direct bearing on the question of continuous growth which underlies the concept of developmental tasks to be discussed later in the chapter

[d] Development proceeds in a *cephalo-caudal* and *proximo-distal* direction, i e , from the head toward the feet and from the spinal column

toward the extremities This would pertain to both physical growth and motor development and the feet would be last in the developmental sequence from the standpoint of formation and of coordination Thus, the head and neck make up about one-third of the total body weight at birth but only one-tenth at maturity By contrast, the trunk accounts for 44 percent of the total body weight at birth and 52 percent at maturity It is also interesting to note that 80 percent of the brain weight is attained at age five

[e] The various aspects of development are highly interrelated, and interdependent, and it is only when considered with relation to other aspects that any phase of development becomes meaningful In fact, growth in one area can only go so far without the corresponding development in other areas Thus, growth consists of a virtuous circle—or rather a virtuous spiral by means of which the individual can climb higher and higher, the gains in one phase of growth depending on gains in other areas and, in turn, making possible greater gains in the other aspects For instance, physical growth is necessary for maximum social growth the crippled child is likely to be limited in his social contacts and in opportunity for learning social skills and social adjustment Physical ⋅growth is also important in promoting mental growth the child whose sensory organs have not matured sufficiently is deprived of stimulation by means of which mental growth can ensue In the same way, emotional growth is directly dependent upon social growth in that affection, anger, fear generally have a social setting, and indirectly dependent upon physical growth through the effect of such things as physical size, physical deformities, strength, and coordination in determining whether a given situation is going to produce an emotion, and of what kind Emotional growth is also closely related to intellectual growth ones level of intelligence affects the likelihood of frustration leading to⋅emotional reactions, and conversely, emotional tensions interfere with functional intelligence These tensions also interfere with the effectiveness of ones social contacts Other relationships could, of course, be pointed out, but enough have been mentioned to suggest that one has to be concerned with the whole child because difficulties with one area of growth will soon lead to difficulty in other areas

A corollary of the above discussion would be that one has to resist the temptation to think of any single phase of growth and development as more fundamental or important than the others They are so closely interrelated that, rather than existing independently, they involve the whole organism as a functioning unit For this reason, it should be fully understood that the breakdown of growth and development into physical, motor, emotional, social, and intellectual, as will be done in the

next few chapters, is for the purpose of discussion and analysis only It would also follow as a second corollary of the previous discussion that an over-concern with one aspect of the child's growth with the corresponding neglect of the other aspects is not likely to be too successful

Actually, the school has accepted responsibility for more and more of the child's total development In fact, it has done so to such an extent that some critics have suggested that we have gone too far, that we have diluted our efforts to the point of going into areas in which we are not particularly qualified and have done this at the expense of the things which are more rightly within the school's area of competence and fundamental responsibility The validity of these criticisms has, of course, not been shown but perhaps a redefinition of our function in society is in order—lest by trying to be everything to everybody at once, we get ourselves and our students into difficulty

The interrelationship and interdependence among the various aspects of growth and development are generally greater for young children than for adults where the correlation between some of these aspects, although positive, is very nearly zero Thus, whereas ability to follow a bright object with his eyes is sometimes used as an index of brightness in an infant, motor coordination and physical size are relatively useless as a guide to the mental caliber of an adult Nevertheless, research evidence supports the theory of correlation—and not that of compensation as was formerly believed That is, if a person is superior in one trait, chances are better than average that he will be superior in a second trait Terman, in his study of one thousand gifted children [380] found them to be superior to children of their own chronological age not only in intelligence but also in physical size and strength, in social and emotional maturity, and in other desirable traits This correlation is not high and many gifted children are puny and sickly just as many fine physical specimens are dull, or socially or emotionally immature As noted in the Harvard Growth studies, the relationship between physical and mental measurements is so low that knowledge of one is relatively useless in predicting the other Nevertheless, the trend is for desirable traits to go together although, to be sure, a person is not likely to be good in everything, so that even if a person is superior in one respect, he is likely to have at least one area in which he would fall below average In the same way, the person who is inferior with regard to say, intelligence, is likely to be inferior in any one specific trait, although there is likely to be at least one area in which he would be superior Furthermore he may devote special effort in this area as a way of compensating for his weaknesses in other areas However, this does not mean that because a student is failing in the academic curriculum, for instance, that he is a

good prospect for success in the shop program Nor does it mean that failure in the College of Engineering is adequate proof of one's suitability to enter the teaching profession

[f] The younger the child, the more he does everything of which he is capable As stated in the previous chapter, one of the basic characteristics of youth is the desire to grow, to do those things which maturation permits Thus, the baby resents being fed, being dressed, he wants to explore exercise his capacities, and adults should be particularly careful not to destroy this initiative and curiosity by penalizing him for mistakes to the point where he finds it pays to play it safe As the child becomes older, his range of possible activities becomes so great that he has to be selective so that what he does becomes progressively more a matter of choice—with custom, social pressures, opportunities, and likelihood of success and reward being major considerations in such choices

Despite this need to grow, there tend to be frequent reversions to earlier modes of behavior in times of stress, even adults will occasionally revert to fighting, crying, and other childish behavior Also, despite his need to grow, the individual will at times hang on to obsolete forms of behavior This is particularly true in the area of adjustment in which emotional involvement often prevents him from finding more adequate solutions to his problems Thus, a person may continue to fear a given situation of which he was understandably afraid when he was young and defenseless but which, with his present level of competence, he need no longer fear

Children will also tend to overdo a given response Parents and teachers sometimes get concerned as the child goes out of his way to use a new-found response and spend time and energy in trying to have him eliminate a habit which will tend to drop out on its own as he matures Any fuss made over such responses will only serve to fixate them as the child finds it necessary to brace himself in order to prevent his being pushed around In fact, pressures on the part of adults to change things will tend to increase the child's insecurity and create resistance to new learnings that he would achieve eagerly if he were not pushed

Attempts at Early Training

Obviously, there is need for a certain degree of maturation before learning can take place walking, for instance, cannot be undertaken before the child has developed a certain bone and muscular structure How-

ever, at any given age, the child is capable of learning, through proper training, more advanced behavior than he would normally attain if he relied solely on maturation and the usual incidental environmental stimulation he can be taught to walk perhaps as much as six months before he would otherwise, for example Normally, these learnings come naturally when sufficient maturation has been achieved he will walk when he is ready and all the coaxing and coaching the parents put into teaching him to walk may appear to be a relative waste of time The question of considerable relevance to teachers is whether such a speeding up of the child's learning beyond what would come naturally through maturation is worthwhile

That special training can speed up the child's learning beyond what would come naturally through maturation under conditions of incidental stimulation has been shown by such studies as that of Gesell and Thompson [135] and that of McGraw [217] In both cases, one member of a pair of identical twins was given special training in such tasks as crawling, sitting, standing, jumping, swimming, climbing stairs and inclines and, in a short time, completely outdistanced in certain skills his twin who was simply allowed to grow at his own rate After a period of a few weeks, the training of the first twin was discontinued and, in a fairly short time, the untrained twin had caught up with him and they continued to grow at the same rate It is to be noted that the second twin could learn easily and quickly, when he came to them with a greater degree of maturation some weeks later, tasks which had proven rather difficult for the first It is also interesting to note that, while the untrained twin would not even try the complicated skills like swimming which the other twin had mastered, the two twins learned at about the same time the more basic skills of crawling, sitting, standing, and walking

Normally, the maturation that occurs does not take place within a vacuum the untrained twin was still subjected to some form of incidental stimulation The only difference between the two was that the trained twin received more formal and concentrated practice Yet, there is evidence to suggest that maturation would take place even without this incidental stimulation Carmichael [55], for instance anesthetized tadpoles with chlorotone which immobilized them but did not interfere with their growth At a given age, when a control group of tadpoles in plain water began to swim, he removed the anesthetic and the tadpoles that had had no practice in swimming swam as well as those that had Other examples of the sufficiency of maturation in certain aspects of development include the following (a) Chicks prevented from pecking by being kept and fed in the dark for the first day almost immediately be-

come as proficient at pecking in daylight as those that have had continuous practice [332], (b) Dennis and Dennis [92] found that the Hopi papooses who were cradled so that they could not move their legs walked as early and as well as those not cradled, (c) Dennis [91] also found that children prevented from sitting, reaching, and walking were able to perform as well in those areas as those who were allowed freedom of movement, and (d) Swallows kept till fully fledged in cages so they could not fly flew about as well when released as any mature swallow that had had practice in flying [355]

It seems clear that special training can lead the child to master certain skills that would not normally be learned until later in the usual developmental sequence the question to be raised concerns the practicality and advisability of such early training Whereas no conclusion can be reached since each case would have to be evaluated on its own merits the following generalizations seem to have theoretical as well as empirical support

[a] Such training tends to be uneconomical and wasteful, involving as it does the need for special instruction and many repetitions to learn what later would come much more easily Gesell and Thompson, for example found that in two weeks the second twin was able to perform certain skills which earlier it had taken the first twin six weeks to learn The McGraw study gave similar results In the school situation, where time is limited, there is need to gear the educational program to the maturational level of the child, for teachers cannot afford to spend a month teaching what could be learned next year in a matter of days Time must be budgeted and used to best advantage On the other hand there is a limit to the amount of material that can be postponed until ' next year and there is often a need to introduce material somewhat in advance of the period of the maximum economy of time and effort required to master it

As stated previously, the extent to which special training leads to an improvement in performance over what would occur naturally varies with the nature of the tasks involved In skills in which muscular strength and speed and precision of movement are crucial factors, maturation is essentially a sufficient determinant of proficiency and special practice is correspondingly futile In tasks of greater complexity such as those of the classroom, on the other hand, opportunity and training may play a more essential role in determining the degree of proficiency one will attain Thus, it would seem logical to suspect that maturation and incidental stimulation would hardly lead to proficiency in advanced mathematics Nevertheless, even in the field of ideational learnings, early

training has its limitations Pistor [298], for example, found that the training of sixth-grade children in chronology did not result in an improvement in their understanding of time sequence Similar results were obtained by Strayer [372] in the area of language development

[b] Such training may also be definitely harmful Forcing the child to the limit of his ability may well result in frustration, discouragement, as well as in negative habits and personal maladjustment which will interfere with subsequent learning Even the best teaching may be harmful if introduced too soon or too fast Stroud [373], for example, suggests that reading clinics and remedial reading programs stand as "testimony to the unwisdom of our haste," a statement with which many remedial teachers and many psychologists would fully agree

It is also true that a skill learned at an early age is often not kept intact but rather has to be adapted to the other changes occurring in the process of growth Thus, the child who has learned to skate at the age of two would have to readapt his skill to a longer leg-to-trunk ratio when he starts to skate again after a few years of lay-off

[c] Early training may actually be of great benefit First, it may result in such outstanding performance that it would never be equalled by a person who did not get this early training It may also result in positive attitudes of confidence that would carry over into all aspects of life It may also forestall the development of bad habits that might develop when a person learns something by himself, and it may provide the child with an early start in learning certain skills which would then be the basis for the early learning of other skills further up on the sequence An early start of this kind might well be the beginning of a virtuous circle which would give the individual the motivation and the opportunity for unlimited practice the child who learns to swim early would be more likely to make the team at the Y and at school and would therefore, get more practice as well as more coaching than one who started later

[d] The crucial point seems to be the manner in which this training is given Too often teachers get overly anxious and try to push the child simply because the teacher of the next grade, the parents, or the principal expect him to have covered so much material Unfortunately such efforts, far from building up the background he needs for the next grade, are more likely to make him unready by developing emotional blocks and a negative self-concept It is better, for instance, that the child discover that he can read than it is that he have, under duress, plodded through the first grade reader—while, at the same time, developing attitudes of defeat and frustration as a result of being pushed too hard It seems safe

to say that, likewise, the most concentrated attempt on the part of parents to promote early learning, namely, training in bladder and bowel control is very often misguided since training is, many times, undertaken before the neural and muscular development necessary for such control is present [4] The child, meantime, is learning things he may become convinced that he can never please his parents, that his parents are fussy and demanding, or he may be learn ng that his parents are very much interested in his welfare There is no rule as to whether to encourage or discourage the early training of children generally, one would have to be sure that.the gains to be derived from such training are worth the cost in time and effort as well as the risk of possible harm which is involved If it is to be done, an approach of positive encouragement must be used and patience and understanding are essential

Readiness

Closely related to the matter of early training is the concept of readiness Involved in both cases is the extent to which the learner has the capability to profit from the experiences to which he is being subjected There is, however, one major difference up to now the discussion has centered around the question of adequate maturation (of inherited potential) whereas readiness does not depend on the maturation of inborn capacities alone but incorporates such factors as motivation and experience in which environment plays a much more important role Thus, reading readiness implies more than the intellectual maturation represented by a minimal mental age of six years, six months and a certain degree of physiological growth And, whereas it is relatively difficult, if not impossible, to speed up maturation, emphasis on the trainable aspects of reading readiness has made it possible to teach reading successfully to classes with an average mental age of five [130] Readiness is simply a matter of the child being able to bring to bear on a given task capabilities equal to the demands of the situation It is basic to the question of coordinating the grade placement of subject-matter topics and the pedagogical procedures through which these topics are taught with the grade placement of the students

Readiness for a task of any degree of complexity generally requires

readiness from the standpoint of a number of relatively independent aspects It is, therefore, possible for a child to be unready despite more than sufficient readiness on some aspects of the task to the extent that he may lack readiness regarding one or more aspects of the situation, he may just not be ready for the task at all Thus, reading readiness includes all of the following a certain degree of mental development, a degree of eye coordination sufficient to permit clear perception, ability to attend to symbols, a fairly large background of experience which allows the child to relate what he reads to things he has experienced, an interest in stories and ability to see what is coming next, favorable, attitudes including a desire to learn to read, social and emotional maturation that permits him to devote his capacities to reading rather than dissipating them in overcoming emotional blocks, and many other aspects of development, the lack of any one of which might lead to failure in learning to read In practice, a great deal of time is generally spent in kindergarten and in the first grade on the development of the required readiness through creating interest in stories, expanding experiences, and building gross discrimination However, to be precise, the reading-readiness program begins in the home when the child sees his parents and siblings read, when they read him stories, when they relate to him some of their experiences—in short, when they help him develop a desire to read and an experiential background as a basis for interpreting what he reads

Readiness does not apply only to the work of the first grade at any time the teacher is about to introduce a new topic, as for instance decimals, he should consider the readiness level of each individual child with respect to the material to be presented Teachers far too often act as though they believe that every pupil in their class is ready for whatever the curriculum-maker happens to assign to a given grade level There is a need to determine what are the experiences appropriate for each level of growth and for each child as there is a need to determine the aspects and the level of readiness required for the various subjects and topics dealt with in the classroom Such a procedure would eliminate much of the failure, frustration, and other problems often encountered It is safe to say that when children as a group misbehave or are lacking in interest, they are not ready for whatever is being done in the classroom

There is an obvious need to adjust the curriculum to the readiness level of the child so that he can get started on the right foot Unfortunately, in practice, there is no simple and sure way of telling when a child is ready—and this is true whether the question arises in connection with reading, decimals, or anything else—so that, in the final analysis, there has to be a certain amount of trial and error during which an alert

and experienced teacher senses the extent to which the material is con-
sistent with the child's present development Tests are available com-
mercially to measure the degree of readiness in certain areas A com-
posite page showing some of the items included in the Gates Reading
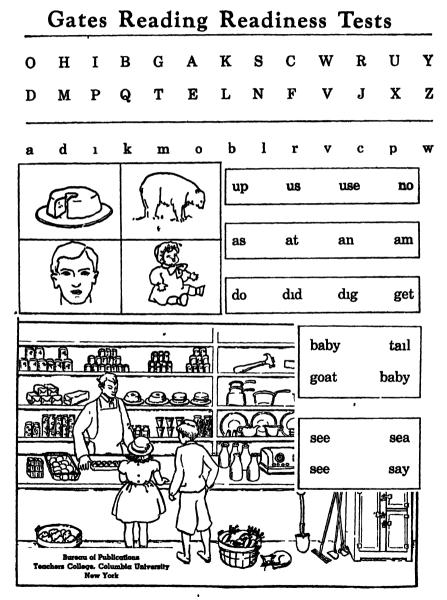Readiness Test is printed here Prognostic (or readiness) tests are also

Gates Reading Readiness Tests

O	H	I	B	G	A	K	S	C	W	R	U	Y
D	M	P	Q	T	E	L	N	F	V	J	X	Z

a	d	ı	k	m	o	b	l	r	v	c	p	w

FIG 3 2 *A composite picture of various subtests from the Gates Reading
Readiness Test* [127]

available in such subjects as foreign languages and algebra, but none is foolproof all that can be expected from them is an additional bit of objective evidence to be added to the many other evaluations of readiness which must be considered if the best decision is to be reached Actually, the problem is not of unsolvable complexity to a large extent the teacher can play it by ear Readiness is a matter of degree and if the child is not responding to the teacher's approach, he is apparently not yet ready and the teacher should continue readiness activities for a while longer It must also be realized that certain children may never reach the state of readiness required to succeed, say in algebra For such children, attempts to introduce the subject are doomed to failure and harm to a number of them is a definite possibility

Developmental Tasks

We have seen that it is generally not advisable to introduce training too soon in the maturational sequence There is, however, the complementary problem, namely, that of not introducing it soon enough "What if the child is ready for a given task but is denied the opportunity to learn it?" The general thinking on the subject is that there is an age level which is optimal for the effective learning of any given task presented at the right time, it can be a challenge and a source of enjoyment, presented too late or too soon, it becomes a source of boredom or frustration Havighurst [170], in his treatment of the problems with which individuals must cope at each developmental level, if adjustment is to be maintained, has popularized the term *developmental task* which he defines as one that

> arise at or about a certain period in the life of the individual, successful achievement of which leads to his happiness and to success with later tasks, while failure leads to unhappiness in the individual, disapproval by the society, and difficulty with later tasks

Thus, in the course of development, the child reaches certain stages which not only make it possible for him to master certain tasks but also make it imperative that he do so in order that he be ready to master the other tasks higher in the developmental sequence and those that are on the same level in related aspects of development For example, failure to achieve heterosexual adjustment is likely to affect not only most phases

of the adolescent's present development but it is also likely to have repercussions on his later adjustment

An unlimited number of examples could be given of the difficulties which arise out of failure to master a given task when its most appropriate time for learning occurs the following illustrates the point rather dramatically We have seen (page 77) that maturation is generally sufficient to enable chicks to peck, Padilla [290], however, reports that chicks delayed in pecking by being fed in the dark with an eye dropper for a number of days after hatching experience difficulty in learning to peck and that the more they are delayed the more practice pecks they require in order to reach a certain level of accuracy In fact, a prolonged delay of fourteen days results in the disintegration of the pecking response to such an extent that most chicks never peck and starve to death "in the midst of plenty," and even an unusual amount of training and practice does not restore the disorganized pecking response to the level of normal accuracy Similarly, the child who enters school for the first time at, say, age twelve is likely to encounter untold problems ranging from feelings of self-consciousness to inability to find material which combines the proper level of difficulty and content in line with his interests The teacher's responsibility in this connection is to see that the child masters each task in sequence at its most teachable moment and that he make reasonable progress in coping with the developmental tasks of his age level

A number of authors have presented lists of the developmental tasks to be handled at various age levels Cole [66], for example, lists the following as the major tasks of adolescence self-direction, objective intellectual analysis, integrated philosophy, social competence, and emotional, sexual, and economic adjustment Probably the most complete formulation of the specific developmental tasks of the various age levels is that of Havighurst who gives an excellent treatment of the tasks to be mastered in each of the following periods infancy and early childhood, middle childhood, adolescence, early adulthood, middle age, and later maturity For instance, for the period of adolescence, he mentions the following

Achieving new and more mature relations with age-mates of both sexes,

Achieving a masculine or feminine social role,

Accepting one's physique and using the body effectively,

Achieving emotional independence of parents and other adults,

Achieving assurance of economic independence,

Selecting and preparing for an occupation,

Preparing for marriage and family life,

Developing and achieving socially responsible behavior, and

Acquiring a set of values and an ethical system is a guide to behavior

He discusses each from the standpoint of its biological, psychological, and cultural basis as well as from the standpoint of its educational implications Thus, in connection with achieving emotional independence of parents and other adults, he recognizes that the home, and not the school, has primary responsibility for helping boys and girls accomplish this independence On the other hand, he points out that colleges, for example, have a chance to help young people who are away from their parents for the first time, and he suggests that teachers learn to play a useful role in the process of psychological weaning and to help parents understand the problem and attack it constructively

Of course, it becomes quite a problem at times to provide the right experiences at the right time for some thirty youngsters who invariably do not find it convenient to be ready for the same experience at the same time Fortunately, the teacher's task is not an impossible one first, the individual child has a fundamental drive toward growing so that he does not have to be pushed over every hurdle Furthermore, the most appropriate time for a given task to be mastered is not a matter of minutes or days and the individual has remarkable ability to catch up when he has fallen temporarily behind Thus, regardless of the difficulty involved, the importance of having the individual accomplish the task required at his age level is such as to deserve our attention and efforts

HIGHLIGHTS OF THE CHAPTER

This chapter contains a certain amount of information which is of a general nature but which is of importance to the teacher if he is to be successful in coordinating the efforts of the school with the maturational pattern of the child Among the more important ideas discussed are the following

[a] Whatever development an individual displays at a given time is the result of the interaction of environmental influences upon the potentialities with which he was born These two sets of factors are so thoroughly interrelated that it is impossible to separate the specific influence of the one from that of the other

[b] One's potentialities are set in a large measure as a result of one's

inherited structure Nevertheless, even though there are limits to the extent in which environmental forces can compensate for inherited limitations, environment is of major importance in the individual's attainment of his inherited potential This is especially true in connection with classroom work where achievement often depends upon readiness rather than upon maturation On the other hand, only harm to the child can result from an attempt to ignore the fact that limitations do exist

[c] The knowledge that the rate of development varies from child to child suggests the futility of mass education aimed at the nonexistent average child

[d] The interrelatedness of the various aspects of the child's development points to the need for dealing with the whole child This interrelatedness, along with the fact that development follows a definite sequence, implies that failure to master any developmental task at the appropriate time—such as failure to learn to read in the first grade—is likely to lead to major difficulty

[e] The child has an inbuilt success mechanism in his desire to grow It is unfortunate that so often adults—and perhaps *especially* teachers— go out of their way to stifle this enthusiasm by subjecting him to frequent and costly failures With a little more care in establishing readiness before introducing a new activity, teachers could save themselves a great deal of the difficulty they encounter later in having to *motivate* reluctant students Encouraging the child is generally a more effective—as well as a safer—procedure than is pushing him

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QUESTIONS AND PROJECTS

1 To what extent is the problem of heredity and environment one of academic interest rather than one of practical significance? One of sociological interest rather than of educational importance?

2 Debate (a) All that the individual inherits is a certain body structure which is receptive to stimulation (b) Human stock is improvable only by selection (See Dashiell, *Fundamentals of General Psychology* Boston Houghton Mifflin, 1949, p 61)

3 Specifically, how would you go about enriching the experience of city children about to undertake a unit on "The Farm"?

4 Discuss the role of TV as a medium for promoting readiness

4

Physical and Motor
Development

❦

Although we can ha.dly fail to notice the diamatic physical changes which take place in school children, we can all too readily overlook their significance

SILPHIN'S [367]

⌒

THE ADEQUACY OF THE INDIVIDUAL's body and of his physical equipment is of primary concern to students of educational psychology, for it determines in large measure the ease or difficulty which he will encounter in the satisfaction of his needs and the nature of the self-concept he will develop Thus, while physical development is of great importance in itself, it is of even greater importance from the standpoint of its psychological implications and the discussion will, therefore, be oriented toward the psychological rather than the physical and physiological aspects This is not to minimize the importance of the latter especially in view of the unfavorable picture of the physical health of our youth as reported by World War II military induction centers

Growth in Height and Weight

NATURE OI PHYSICAL GROWTH

Certainly the most noticeable aspect of the child's total growth is the change that takes place in his physical size This growth in both height and weight is particularly rapid in early life as he multiplies a millionfold during the nine-month period following conception and doubles by six months his weight at birth Growth continues at a rapid rate during infancy, moves alternately through periods of rapid and slow gains, and gradually tapers off in the middle teens in the case of girls and a couple of years later in the case of boys

The growth pattern of the individual from birth to matunity measured in terms of increases in height, weight, or any other physical characteristic can be represented by a curve such as those of heights of boys and girls shown on page 90 However, these curves represent average status for the various age levels and give the misleading impression that growth is smooth and continuous while, in reality, the smoothness results from the fact that, at any given age, the rapid growth of one child is offset by the slow growth of another Thus, while such curves are interesting and valuable from the standpoint of general information, one must not lose sight of the fact that each child has a unique pattern of growth which may differ by quite a margin from the average pattern characteristic of the group This does not imply that all is haphazard and chaotic with few exceptions, the tall infant remains tall and becomes the tall adult while the short infant tends to remain short In fact, Baldwin [20] expresses the view that growth in height is so comparatively uniform for each individual that growth curves enable one to prophesy with a "high degree of accuracy" how tall a young child will be at a later age Bayley [27] has actually devised a scale to predict adult height from the child's height at various ages Contrarily, there is considerable evidence to show that growth is not smooth and continuous but that it goes by spurts—at least for some children—suggesting that predicting future status from the child's present height is subject to considerable error and is especially so during the period of adolescence Olson and Hughes [286] recommend, as a more stable index of growth, the concept of 'organismic age" which is a composite of the child's height, weight, dental, carpal, mental, grip, and reading age Research has supported their claim of the stability of the organismic age but it is debatable as to whether this consistency implies that the child has only so much energy to devote to growing and that, as

he spurts forward in one phase of growth, he does so at the expense of some of the other aspects [1] or whether it simply reflects the well-known statistical fact that an average is always less susceptible to drastic fluctuations than is a single measure. At any rate, the concept is of limited practical value to the average teacher who would have no way of measuring some of the components, e g , carpal age

As is shown in Figure 4 1, the growth pattern of boys and girls
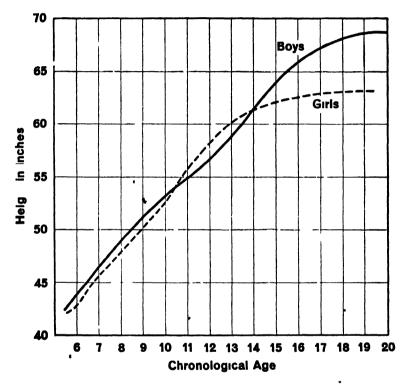
Fig 4·1 *Height of boys and girls After* Shuttleworth [338]

differs in a number of important respects Boys are not only taller and heavier at birth, but their final status is one of greater height and weight Girls, on the other hand, reach their final status, i e , reach physical as well as physiological maturity some eighteen months earlier than boys and, it is important to note, are on the average both taller and heavier than boys during the period from 11 to 14 They are, of course, generally taller and heavier than boys throughout their period of growth,

[1] The Harvard Growth studies found no evidence of retardation in mental development accompanying the preadolescent growth spurt and discounted the likelihood of its causing an academic lag in early adolescence

when growth is measured as a fraction of final status, in fact, they are simply more mature than boys of their chronological age

Growth rates are apparently affected by a number of environmental conditions Girls reach physiological maturity earlier in temperate climates than they do in either colder or warmer climates There are also indications [1] that weight increases more rapidly in late summer and autumn while height increases more rapidly in winter and spring, a phenomenon which might have an explanation in terms of the greater water content of the body in summer and the reduction in the amount of exercise children take in the cold winter months .

Growth is also related to socioeconomic and cultural status Upper-class children tend to be taller than children of middle or lower class—perhaps because of heredity, if we assume that physical size is an asset in attaining success, or perhaps because of certain nutritional and other advantages [152] Physical growth has also been found to be related to such things as depressions, war, and even milk programs [226, 291] This may account for the fact that negroes and children from homes of limited financial means tend to be smaller than average [261] although inherited differences may also be postulated Actually, the general consensus, based on considerable research, is that physical growth is more dependent upon· heredity than is any of the other aspects of growth Olson and Hughes [286] for example, express the belief that " attempts to force growth are resisted and that a child tends to grow more rapidly to make up for temporary periods of deprivation " It is generally agreed that such things as the usual illnesses that befall growing children have only a temporary effect upon their growth and do not affect their final status appreciably, if at all Endocrine imbalance, whether related to hereditary or environmental causes, however, can be expected to effect a considerable departure from normality both in the rate of maturing of the individual and in his final status .

Regardless of the causal factors involved, wide variations exist in the physical size of children of any given age Thus, from Simmons' data, shown in Figure 4 2 it can be seen that the tallest seven-year-old boy, for example, is about as tall as the shortest thirteen-year-old while, for girls, the tallest eight-year-old is considerably taller than the shortest fourteen-year-old Similarly, the tallest two percent of the seven-year-old boys in Baldwin's sample were actually taller than the shortest two percent of the thirteen-year-olds, while, for girls, the tallest two percent of the ten-year-olds were taller than the shortest two percent of the sixteen-year-olds

Generally, when we plot the heights of the members of any age
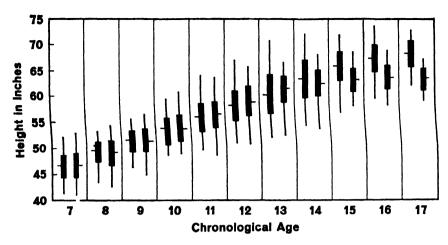
FIG 4 2 *Range of heights of boys and girls of various ages After*
Simmons [339]

group, we find they distribute themselves in what is generally known as
the normal curve Such a distribution is shown in Figure 4 3 [297] Thus,
we find few very short and few very tall individuals, with increasing
frequencies as we get closer to the average This is rather typical of the
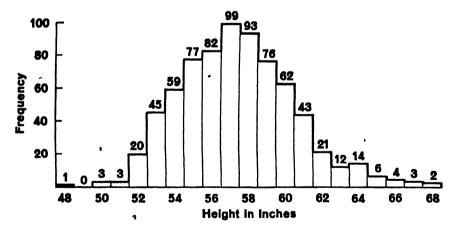
FIG 4 3 *Distribution of heights of 725 twelve-year-old boys Courtesy*
of Dr Pett [297]

distribution of most physical and psychological traits, e g , running speed,
strength of grip, intelligence, performance on a test In nearly all cases,
we do not have separate categories—tall, medium, and short or bright,
average, and dull—but rather a continuum ranging from very tall to very
short, from very bright to very dull, with a definite concentration of in-

dividuals of average height or intelligence In most human traits, individuals differ in degree rather than in kind and the percentage of the cases of a given distribution decreases progressively with increasingly greater deviations (in either direction) from the average of the group

PSYCHOLOGICAL IMPLICATIONS

The psychological implication of physical (and motor) development can readily be understood in terms of its effect upon the self-image and upon the difficulty or ease with which the individual can satisfy his needs What we think of ourselves and what others think of us—and the demands they make of us as well as those we make of ourselves—depend to a large extent upon our physique and the reactions it creates Thus, strength and physical size are among the important attributes of the ten-year-old boy just as an attractive figure and a pretty face are valued attributes of the teen-age girl To a very great extent, one's whole adjustment revolves around such ideas as 'beautiful," "tall and handsome," "buckteeth," "shorty," "fatso," 'beanpole," "skinny," etc In fact, much of one's life might well depend on being a "Marilyn Monroe," an ' Erroll Flynn,' a ' Jimmy Durante," or a 'Tarzan " In the same way, one's self-concept is directly tied to the color of his skin (particularly in areas where racial prejudices are strong) or even to the color of his hair, e g , 'carrot-top "

The seriousness from a psychological point of view of limitations in the area of physical adequacy cannot be overestimated In a study by Stolz and Stolz [371], for instance, over one-third of the 176 boys and girls examined at six-month intervals over a period of eight years expressed concern over some physical characteristic Being a "runt," a "tub," or being ' ugly may easily represent handicaps to adjustment and to success in an objective sense comparable to deformities and other deviations from normality Likewise, an extended illness on the part of the child may well leave some scar on his psychological make-up and the teacher, if he is to be effective in dealing with children, had better become acquainted with their past as well as present status

What is even more important is the child's reaction to his physical limitations, illnesses, and characteristics The "statuesque" teen-age girl who feels badly over being "too tall," the adolescent with a severe case of acne, the smaller boy, all must be led toward an increase in self-acceptance —for acceptance is circular if we don't accept ourselves, we cannot expect others to do so Unfortunately, the way others see us may actually reinforce the attitude we would like to overcome the small boy may be babied longer and denied the opportunity of assuming responsibility just

as the tall girl may get constant reminders of her height from the fact that boys avoid her On the other hand, the boy who is tall for his age may be faced with demands and expectations that are beyond his over-all maturity

As we have seen in the previous chapter, physical development is directly and vitally related to the other aspects of development Social and emotional development are greatly facilitated by such physical assets as attractiveness, size, and strength Likewise, physical adequacy or inadequacy have an important bearing, both direct and indirect, upon academic progress not only do they affect learning through their effect upon adjustment but such difficulties as lack of coordination of the eyes in first graders may begin a vicious cycle of frustration and failure that may ruin a whole academic career

THE PREADOLESCENT GROWTH SPURT

The preadolescent growth spurt is of particular interest to prospective teachers because of the complications which are directly or indirectly related to the rapid growth which occurs during this period a boy, for instance, may add five inches to his height and twenty-five pounds to his weight in a matter of a year This spurt is very closely timed to taper off with the advent of puberty, although it may occur up to three years before and, in some 10 percent of the cases, up to three years after the attainment of sexual maturity [89]

Many physical and physiological changes are connected with this growth spurt besides the rapid increase in over-all height and weight Different parts of the body often begin rapid growth at different times so that the adolescent boy's feet (or perhaps his arms or even his nose) may temporarily grow out of all proportion This may result in awkwardness at a time when he becomes very conscious of himself as a person and he may trip, or knock over a pitcher as he reaches for it, simply because he has not become used to the new length of his limbs and he got there before he anticipated he would Even some of the skills he had mastered have to be relearned because his new body proportions make them essentially new skills To make matters worse, the glandular changes accompanying this growth spurt are likely to result in his face breaking out in a rash of acne at the very time when he becomes conscious of good looks in attracting members of the opposite sex And, of course, the problem is no less acute in the case of girls

None of the physiological changes accompanying the prepubescent growth spurt is any more important than the attainment of sexual maturity and the resulting need for a major reorganization in the individual's

self-concept,[2] as well as in every phase of his behavior and especially in the area of social relations Members of the opposite sex suddenly assume an attractiveness that had not been apparent till then and a new interest in dancing and social sports displaces previous interests in the gang and in preadolescent activities Of major import is the sex drive itself and the conflicts it is likely to introduce in a culture such as ours with its taboos where matters of sex are involved

Such drastic changes as take place during the prepubescent growth spurt are bound to have psychological repercussions on the individual This is particularly true where, in addition to the problems attending bodily changes, the youth, trying to think of himself as an adult willing to assume adult responsibilities, is prevented from doing so Thus, in contrast to adolescence in primitive societies or even in pioneer days in our country where the adolescent simply took his place as a full-fledged adult member of society rather early, adolescence for the modern American youth has become a period of considerable strain and stress As a result, confusion and insecurity together with rebelliousness and defiance are often as much part of the adolescent pattern as are awkwardness and a liking for "rock and roll" music

The problems connected with the adolescent growth spurt and the advent of puberty are relatively minor in the average case by comparison to what they are when these changes take place late or early Research [204] has shown that puberty takes place any time from ages 10 to 17 and from 11 to 18 in the case of girls and boys respectively The early maturer, having suddenly become interested in members of the opposite sex while his age-mates still "can't see it," is likely to find himself out of joint with the gang This is probably somewhat more of a problem for the early maturing girl since, as we have seen, girls as a group mature earlier than boys The problem is, however, even more severe in the case of late maturers who are likely to feel left out, to be unable to get a date, or even to generate any enthusiasm in that direction It is complicated even further by the fact that, when they finally "arrive," they have to compete for dates, and so forth, with the early maturers who have by now polished their social skills relative to members of the opposite sex to the point of making these Johnnies-come-lately look rather "green" and uninteresting by comparison The teacher, therefore, needs to be careful lest the effects of delayed maturity, by becoming relatively permanent through promoting a vicious circle of immature behavior, be as harmful to the self-realization of the individual as a real defect or abnormality

[2] Probably no better illustration can be found of a major change in the individual's phenomenal field

Body Types

The problem of body build, a topic of consideration as far back as the days of the Greek philosophers, has been the subject of renewed interest as a result of the relatively greater success of recent investigations Probably the best known work in this area is that of Sheldon [331] whose system calls for (a) a classification of body build on a seven point scale in each of three continua, namely, endomorphy, mesomorphy, and ectomorphy and (b) a relating of this classification to the individual's disposition or temperament as follows

Endomorphy-viscerotonia (the roly-poly, 7-1-1), round, short of limbs, soft body, characterized by a good digestive tract, a relaxed social nature, love of comfort, greed for approval and affection, and a need for people when troubled,

Mesomorphy-somatotonia (the superman, 1-7-1), dominance of muscles, bones, and connecting tissues, characterized by being active, energetic, and aggressive, and by a need for action when troubled,

Ectomorphy-cerebrotonia (the beanpole, 1-1-7), dominance of linearity and fragility, characterized by restraint in posture, inhibited, tense, and a preference for solitude when troubled

The relationship between body build and temperament postulated above, if it could be validated, would be of fundamental importance not only to teachers but to anyone dealing with people in any capacity Thus, to the extent that mesomorphy is related to assertiveness and a love for power, it might be expected that the mesomorph will tend to be full of daring and energy and to be a dynamic leader whether 'as a business tycoon, a labor organizer, a gang leader—or in school, a discussion leader, a moving power in student government, or a leader in classroom mischief Furthermore, whereas environmental factors can be expected to bring modifications in the direction in which this drive exerts itself, Willgoose [419] is of the opinion that little, if any, change can be effected in the basic underlying pattern or temperament and that "no amount of education will transform somatotonics into relaxed and indiscriminately amiable viscerotonics or into inhibited, apprehensive, and introverted cerebrotonics"

Research evidence on the validity of the claims of this relationship between body build and temperament has been conflicting One study [328] shows correlations in the neighborhood of 80 between the aspects

of body build and of temperament as postulated by Sheldon But, this whole relationship has been questioned by a number of writers Dearborn and Rothney in the Harvard Growth studies came to the conclusion that the classification of individuals into body types cannot be done with any substantial degree of accuracy Bayley and Tuddenham [28] found several cases of boys changing from endomorphs to mesomorphs during the preadolescent growth spurt Likewise, Lasker [228], after noting the effect of a famine diet in producing changes in body build, concluded that somatotypes are essentially indicators of nutritional status and he expresses the view that, before progress is made in the matter of relating temperament to physique, there would be need to control environmental factors more rigorously Sheldon, of course, claims that diet would not affect his classification of a given individual and that, although it might produce an emaciated endomorph or an obese ectomorph, the basic body type would remain unchanged

And so the problem remains for the future to solve As it stands, there is some evidence of a relationship between body build and temperament along the lines postulated by Sheldon and his co-workers but the relationship is such as to warrant considerable caution in its applications The explanation of the basic cause underlying the relationship noted is also of interest, although, to date, it is largely a matter of speculation One explanation centers around the glandular structure of the individual as the causal agent of both the individual's build and his temperament Thus, a pituitary deficiency might result in obesity and a general lack of energy so that the person is likely to be lacking in aggressiveness and, therefore, to compensate through sociability Perhaps the simplest explanation from the standpoint of psychology is that the relationship noted simply reflects a learning situation the endomorph, for example, learns out of necessity to be congenial while the mesomorph, being successful in dealing with others especially during the gang. stage, develops self-confidence and learns that he can get what he wants by being aggressive

Motor Development

Closely related to physical growth is the development of motor proficiency which, once again, even though it is of major importance in itself, is of even greater importance from the standpoint of its effect upon the ease or difficulty with which the individual satisfies his needs and upon the formation of a positive or negative self-concept This is par-

ticularly true for the period of preadolescence when physical and motor adequacy is an important determinant of status but, with the current emphasis on sports in high school and college, it may well exert a powerful influence upon the individual throughout his formative years Thus, the youth who scores a touchdown or bats in the winning run not only finds his needs of achievement, social recognition, and self-esteem well satisfied but he also finds himself a hero in the eyes of all, including himself And, fortunately, although motor proficiency is somewhat correlated with the other aspects of development, it is still sufficiently independent of these aspects to provide the means for satisfying the needs of many children who find very little satisfaction in other areas Many sons of families of low socioeconomic status, for example, have used boxing, football, and other sports as avenues to success and prestige

The negative aspect of the correlation of motor proficiency and social and emotional growth should also be noted just as physical deformity can be a serious liability in social and emotional development, so can awkwardness and lack of speed, strength, or coordination—as might be involved in inability to dance or to make the team It, therefore, becomes the responsibility of the school, if it is to be of maximum service to its students, to help them develop the motor strength, speed, and coordination of which they are capable—and even to teach them such motor skills as they need in order to attain their maximum self-realization There is no excuse, for instance, for not teaching boys of junior high-school age how to dance when such a skill is a must if they are to go on with the developmental task of heterosexual adjustment Actually, there is no excuse for the lack of various motor skills and abilities sometimes encountered among our young people In America where we *live* such national sports as baseball and football, there are, nevertheless, countless children—even in our city schools—who have never participated in either sport, who, in fact, have not participated in any organized team sport Schools spend considerable money on an athletic program which, apparently, by-passes the very children who need it most Our military induction centers in the second world war reported a rather sorry picture of the physical fitness of American youth Similar evidence of this general lack of physical and motor development comes from the study of Cureton [82] who found some 14 percent of the students entering a certain university to be soft and flabby, one quarter of them could not jump a stick held waist high, for instance, and 42 percent could not "skin the cat "

As we have seen, motor development proceeds through two interrelated and complementary processes: differentiation and integration, occurring in simultaneous and reciprocal fashion The outcome is a gain

in strength and an increase in speed, precision, and smoothness of movement However, the process is a slow one and parents and teachers are often impatient over the clumsiness of the child, his sloppiness, and the crudeness of the projects he turns out But he wants to grow and, if adults don't make a moral crisis out of spilled milk or spilled ink and insist on a degree of perfection which he cannot produce, the child will learn—even if, at times, adults have their doubts! The important thing is for grown-ups to let the child find his own speed, his own level, and to fight the temptation to take over and do it for him He learns by doing

Gesell's extensive studies of various phases in the development of children from the time of birth should be of interest to parents and teachers from nursery school through junior high school In his report of growth in the first five years of life [131], for instance, he lists developmental sequences in the area of motor development, adaptive behavior, language development, and personal-social behavior Thus, he gives the following examples of the skills displayed by children of various ages in the area of dressing, one of the six breakdowns of personal-social behavior

Age, months	Skill
15	Cooperates in dressing by extending arm or leg
18	Can take off mittens, hat, and socks
24	Can remove shoes if laces are untied
36	Shows greater interest and ability in undressing Is able to unbutton all front and side buttons In dressing, does not know back from front Is intent on lacing shoes but usually laces them incorrectly
48	Is able to undress and dress himself with little assistance Distinguishes between front and back of clothes and puts them on correctly
60	Undresses and dresses with care May be able to tie shoe laces (usually at 6 years)

Probably of greater interest to teachers are the sequel studies [132, 137] of children from five to ten and from ten to sixteen, in which Gesell discusses the significant aspects of the school child's development in terms of such maturity traits as self-care, emotional expression, the growing self, interpersonal relations, school life, ethical sense, and philosophic outlook

Important sex differences exist in motor development as they do in height and weight Although comparisons are difficult to make since boys and girls are generally not involved in the same activities (and to the same degree), there is evidence to suggest that from about eleven to

fourteen girls are more developed and, in many activities involving motor skills, could probably outplay the boys Fortunately for the latter, this situation does not last long after junior high school, boys become so superior to girls in most motor skills as to restrict coeducational participation to a social basis, especially in sports where strength and stamina are important Of course, part of girls' relatively lower level of competence in sports stems from lack of interest (or greater interest in competing activities such as dancing) perhaps resulting from a self-concept which incorporates an idea still fairly common of girls being feminine and helpless Girls, on the other hand, are generally superior in skills requiring accuracy and coordination of the finer muscles, such as the fingers Again, although the more slender fingers of girls may facilitate their greater proficiency in these skills, it is likely that whatever differences may be associated with inherited sex differences are accentuated by the embodiment into the self-concept of boys and girls of the adult version of what constitutes a man's and a woman's work This idea is well brought out by Gates et al , [130] who point out that "the school in common with the community at large is putting a fence around the potentialities of pupils by stereotyped notions as to what boys and girls distinctively are fitted to do "

The various motor abilities and skills tend to be interrelated and the phrase "born athlete" is sometimes used to refer to a person who is highly proficient in a relatively large number of sports This may be misleading for it seems to postulate heredity as the sole determinant of all-round ability Actually, a more correct explanation of the situation would have to consider inherited potential, environmental opportunities, motivation, amount of practice, and other factors, each contributing in various amounts Thus, proficiency in a number of sports might reflect, in part, a high degree of strength and muscular coordination·which serves as the basis for success in all activities where this is important It is also likely that certain skills, once learned in connection with one activity can be transferred to other activities of a similar nature Motivation and opportunity for practice may be important, and, of course, some individuals may concentrate on athletics as a compensation for relative incompetence in other areas Research has shown a positive correlation among the various traits in a given person but, although the intercorrelations among such traits as mental ability, social and emotional maturity, and physical status are generally very low, they would tend to be higher in a restricted area such as motor skills where a common core would feature more prominently

Still the all-round athlete is the exception rather than the rule and

the more diversified the school's sports program, the greater the opportunity for any given child to excel in at least one area Unfortunately, although devised to provide additional avenues for children to satisfy their needs, especially those who are not too proficient in academic work, probably no aspect of the school's program is as inconsiderate of pupil needs as is the sports program With the present emphasis on winning (when it should be on allowing all children the opportunity for maximum self-realization), participation is more or less restricted to the best players —with the rest not even considered or relegated to the "B" team or the intramural program As a result, the very child who needs the benefits of participation in team sports simply does not go out for them or, if he does, he often has to warm the bench while his more capable colleagues improve their proficiency and outclass him all the more

The child's play interests and activities are, of course, contingent upon his motor development a boy does not generate much interest in baseball before the age of nine As his capacity for a greater variety of activities develops, his play interests increase in number (in keeping with his natural desire to grow and do the things of which he is capable) till approximately the age of eight at which time he is capable of so many activities that he has to be selective and he, therefore, concentrates on a few As time goes on, there is a further change as the adult, in keeping with his decreased stamina, seeks less strenuous activities or joins the ranks of the spectators while younger people become the participants In view of the very definite decline in participation in rugged sports during late adolescence and early adulthood, it is extremely desirable that children in schools be encouraged to develop interest in hobbies and less strenuous sports such as golf in which they may continue to participate throughout their lifetime This is particularly important in view of the findings of Nestrick's study [279] which points out that adults seldom take up as hobbies, activities which they have not known in childhood

Handedness

In a group of any size, one is bound to find one or more persons who prefer the use of their left hand over their right School is no exception and any teacher of kindergarten or first grade is likely to have perhaps two or three children who have a preference for their left hand, and the question often arises of whether to let them use the hand they prefer or to have

them change This is particularly a problem when parents are anxious about the mater

Handedness is more than just a matter of which hand a person uses in unimanual tasks it refers to the relative dominance in the use of one hand and, although complete bilaterality is rather uncommon, it is more a question of sidedness than simple handedness The majority of right-handed persons are also right-eyed and right-footed whereas left-handed persons are about evenly divided between right- and left-eyed dominance Interestingly enough, some 30 percent of the population is left-eyed and some people suggest that, except for social pressure relative to the use of the right hand, an equal percentage of the population might also be left-handed There is, however, no record to support the latter claim

Left-handedness is a matter of definition Actually, handedness is not a dichotomy but rather a continuum ranging all the way from strong right-handedness to strong left-handedness It might be possible, for instance, to identify at least six steps along this continuum [a] strong right-handedness where in unimanual tasks the right hand is used and, in two-handed tasks, the left hand only gives support and acts as a fulcrum, [b] moderate right-handedness where in unimanual tasks the right hand is used but, in bimanual tasks, either hand does the leading, [c] mild right-handedness where the right hand is used in unimanual tasks but the left is used to lead in bimanual tasks, [d] mild left-handedness corresponding to [c], [e] moderate left-handedness corresponding to [b], and [f] strong left-handedness, the counterpart of [a] The exact percentage of left-handed individuals in the general population would depend on where the cutting-off point in the above-mentioned continuum is set, the figure is sometimes estimated as high as 10 percent, although perhaps 2 to 6 percent would be a more correct value [253]

Preference for one hand over the other develops in the first few months of life research [408] has shown that infants are neither right- nor left-handed How it develops, however, is rather obscure, with the following among the theories that have been suggested [a] It might be supposed that handedness is a Mendelian characteristic with right-handedness as a dominant trait, or more correctly, that the left hemisphere of the cerebellum is dominant over the right hemisphere with the result that right-handedness tends to be more prevalent than left-handedness [b] Right-handedness might arise through chance as perhaps through the infant in the womb of its mother having more freedom of his right arm which, getting a head start, perpetuates its dominance over the left by greater practice [c] It might be assumed that right-handedness results

from conscious training by a predominantly right-handed world None of these explanations has universal acceptance and despite considerable research in the field, the basis for handedness is still unknown

Regardless of its cause, there is need to consider the desirability of changing the left-handed child to the use of his right hand First, it must be admitted that there are relative advantages in being right-handed This is particularly true in the classroom where, because handwriting in our culture goes from left to right, left-handers are handicapped in seeing what they have written without smearing the ink or wrapping their arm around the writing in an awkward fashion There are also certain advantages in everyday life to being right-handed most appliances and tools have been set up for right-handed people because there are more of them Thus, even check lanes in grocery stores are set up for each attendant to use his right hand on the cash register and his less capable hand for pushing groceries Since there are at least slight advantages in being right-handed, we should consider the reason for hesitation in changing a child to the use of his right hand The answer centers in the fact that there are relatively more people who stammer and stutter among those who have changed hand usage than among the general population [266, 284], Oates, for example, found not only a much greater incidence of speech defects among the left-handed and mixed-handed than among right-handed children but also concluded that changing hand definitely led to an increase in speech defects The same hypothesis has been advanced by Travis [163] who suggests that changing the left-handed child to the use of his right hand disturbs the dominance of the right hemisphere of the brain (which is dominant in left-handed people) and, thereby leads to speech disorders such as stammering and stuttering This explanation is, of course, a matter of hypothesis and many psychologists and educators believe that it is the emotional tension associated with changing hand rather than the change itself that causes speech problems It is also true that only a relatively small percentage of children changed from the use of the left to the right hand stutter and some of these stuttered before the change was attempted Nevertheless, teachers and parents should be aware of the potential dangers involved and reach a decision as to whether or not to change the child only after a careful weighing of the advantages in relation to the possible risks attending such change

As a general policy, it would seem desirable to encourage all left-handed children to write with their right hand All mildly left-handed children who have not developed a strong habit of writing with their left

hand can probably be changed with little effort and little danger When the child resists, however, it may well be best not to force him to the point of creating emotional tension, especially if he is somewhat insecure or is already sensitive about the matter as a result of previous nagging on the the subject When strong habits have already been formed as in the case of high-school students, the desirability of a change is more questionable, there seems to be little purpose in changing over a high-school boy who, in a year or two, will leave school to do, say, semiskilled work where the advantage of one hand over the other, if any, is slight A somewhat stronger stand in favor of changing left-handed children to the use of their right hand is taken by Hildreth and Scheidemann, who are certainly authorities in the field [178] They feel that not only can the well-poised child often be changed without emotional disturbance but that even the nervous child will often benefit in both emotional stability and writing skill from a change of hand Accordingly, they suggest that there should be less hesitancy in interfering with established wrong writing habits

Thus, the problem stands without a solution—a matter of opinion rather than of fact However, to the teacher who has to make a decision one way or the other, it is suggested on the basis of the evidence, even though controversial, that the advantages of being right-handed are probably not sufficiently great to warrant upsetting the child and, although he should be encouraged to use his right hand, if he resists, it may better to settle for teaching him how to write comfortably with his left hand

HIGHLIGHTS OF THE CHAPTER

Physical and motor development have such direct implications from the standpoint of the formation of the self-image and the satisfaction of the needs of the child that teachers need to be familiar with the major concepts in this area The following are among the more important

[a] Growth curves used to depict the physical height and weight of children of various ages are based on averages and apply only in a general way to any one child Each child has a unique pattern of growth and considerable departure from group averages can be expected in the individual case In fact, probably the most outstanding feature of growth is the wide variation that exists among children of any given age group

[b] Growth is characterized by alternate periods of rapid and of slower growth so that the status of a child at any given time is of limited value as an indicator of his final status Nevertheless, the tall child tends to become the tall adult, the short child, the short adult

[c] Girls, as a group, mature earlier than boys and for the period from eleven to fourteen are superior to boys in height and weight as well as in motor coordination

[d] One's self-concept as well as the ease or difficulty encountered in satisfying one's needs revolve to a considerable extent around one s sense of physical adequacy By causing others to react in a given way toward its owner, physical and motor development tend to promote a virtuous or vicious circle and, therefore, to be important factors in the determination of his behavior

[e] Proficiency in motor skills has, likewise, an important bearing upon the satisfaction of the individual's needs and the development of his self-concept, and the school should encourage the child to develop such skills as might make for greater self-realization Unfortunately, much of the effort of the school in this connection is expended on the few who are already proficient while those who need it most are often ignored

[f] Of particular significance are the preadolescent growth spurt and the reorganization of the adolescent's outlook and behavior resulting from the advent of sexual maturity and the pressures of society for more mature behavior The problems connected therewith may be relatively serious for the early and the later maturer, especially the latter ·

[g] Some attempts have been made at relating body build to temperament Whatever relationship has been uncovered to date can probably be explained on the basis of learning, although it may have a partial basis in the glandular structure of the individual '

[h] There is a positive correlation between proficiencies among the various motor abilities and skills However, this correlation is sufficiently low that incompetence in one activity may easily be accompanied by considerable ability in another The school should provide a variety of activities so that each child will have an opportunity to find an area in which he can excel

[i] The teacher considering whether or not to have a left-handed child write with his right hand should weigh the advantages of being right-handed against such possible risks as causing him to stutter and stammer When a change is decided upon, care should be taken that the method used in effecting the change does not lead to emotional disturbance on his part

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QUESTIONS AND PROJECTS

1 [a] Analyze your physical assets and liabilities Do you feel your physical assets are adequate for the job of teaching? [b] What hobbies and other recreational interests have you cultivated? Are they of the type that will continue to provide you with relaxation and enjoyment? Will they involve contacts with people other than teachers and thereby provide you with an occasional change in viewpoint?

2 What might be done to promote greater participation in sports on the part of high school girls? What value might they derive from such participation? Relate the present lack of interest in such participation to the self-concept

3 What do you consider to be realistic steps that might be taken to minimize varsity-type athletics and, thus, provide more children with the benefits of participation in sports? What are the pros and cons of de-emphasizing football?

4 What advantage might there be in having the regular elementary-school teacher take charge of the physical-education period? What objections might there be?

5

Emotional Development

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*This concept, that self-interest is the dynamic core of affective
life, gives the key to effective methods and materials to be used
in education It supplies the cue for the interpretation of the
cross-currents of social life It points the way to national unity
and warns of national disintegration It can render the same
service to humanity*

PRESCOTT [*]

Ok ALL THE ASPICTS of human growth and development, probably no
other is so pervasive as the emotional In fact, emotions are such dynamic
aspects of everyday life that perhaps they should not receive separate
treatment here, but rather should be integrated with the discussion of
other topics To a large extent, emotions set the pattern and the tone of
life, as we can readily appreciate by simply attempting to visualize how
drab life would be without the usual episodes of love and affection, fear,
anger, and joy The relationship of emotional development to physical
social, and intellectual growth has already been pointed out Emotions
are also closely related to the area of learning and adjustment for, as we
shall see, it is the emotional tension resulting from the frustration of our
needs that causes us to seek new and better ways of solving our prob-
lems Because emotions are such an integral part of the total personality,
an understanding of the emotional development of the child is of vital
importance to teachers

[*] Prescott, D A , *Emotions and the Educative Process* Washington A C E , 1938

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The Nature of Emotions

Emotions are generally defined in terms of a stirred-up state of the organism, a definition which, even though not entirely clear, is probably in the right direction in emphasizing the fact that emotions involve the total organism acting as a whole. Of course, the degree to which the organism is "stirred up" would vary from the condition of mild pleasure present in the case of the child listening to an interesting story to that of the intense emotional states sometimes found in blind rage or extreme fear. Individuals are rather consistently undergoing some form of emotion, at least of a mild variety, although considerable variation exists from person to person in the conditions that arouse an emotion and in its nature and intensity as well as in the specific behavior that results.

Emotions are composite affairs, involving at least three interrelated aspects [a] varying degrees of feeling covering the whole range of such continua as annoyance-satisfaction and pleasure-displeasure, [b] rather extensive visceral changes such as increased heartbeat and increased circulation of the blood, and [c] certain impulses involving the skeletal muscles such as an urge to fight when angry or to flee when afraid. The feeling aspect of an emotion is, in a sense, the most important phase of the emotion it may even be considered *the emotion* The opposite view was advanced some years ago by some psychologists who held that, since the feeling involved in an emotion is not subject to observation and verification by anyone but the person having the emotion, it could not be admitted as scientific evidence and that, therefore, emotions may be defined only in terms of the visceral and skeletal reactions which can be observed scientifically It is interesting to note in this connection that these body changes can be produced artificially the injection of adrenalin into the blood stream causes the individual to become keyed up and to display all the visceral and skeletal symptoms of an emotion But under these conditions he would not have the feeling tone and it could be said that he is not really experiencing an emotion— at least, the emotion which he is undergoing could hardly be identified Probably the more correct viewpoint is that which includes all three aspects discussed above and this is the view generally accepted today

Whether or not a situation arouses an emotion in the individual depends upon the interpretation which he places upon it Consequently, when a situation arises which the individual sees as routine, i e , one that

can be handled readily or which does not concern him, he is not likely to generate emotional tension On the contrary, if the situation is conceived as pleasant or threatening, widespread reactions take place in the viscera and the skeletal muscles become tense (i e , ready to act) Finally, these reactions are translated into impulses to meet the demands of the situation and, in many cases, actual behavior along the lines indicated takes place Under conditions of extreme emotions, however, appropriate behavior may not materialize and the person may stand "frozen in his tracks" with fear or may burst into tears with joy The final step in the sequence is, of course, the dissipation of emotional tension and the return to normal

An interesting version of the above sequence is that advanced separately by James and Lange [224] some seventy-five years ago According to the James-Lange theory, as it is called, the impulse to act is the cause and not the result of the emotion, i e , a person does not run away because he is afraid but rather he is afraid because he runs away This theory is not generally accepted today except perhaps as an explanation of how we become aware of an emotion, rather than as an explanation of the emotion Nevertheless, it may be true that an emotion is increased— perhaps through feedback of impulses from the muscles—by the accompanying external activities Thus, a person who starts to run away may find his fear increased whereas if he forces himself to face the situation he may be able to control the fear In the same way, under conditions of anger, it may be better to count to ten than to start striking out An attempt to remain cool and calm under conditions of stress generally pays off in less intense emotions and, to the extent that it becomes habitual or is incorporated in the concept of self, it may be an important aspect of maintaining personal and social adjustment

Thus, we can control our involuntary actions indirectly through controlling voluntary actions By going through the motions, we can get ourselves to believe what we say and we can pull ourselves out of the blues by taking active part in something cheerful It is also true that, as we try to excite others we find ourselves sharing in the excitement, an idea used frequently by rabble rowsers who, by working themselves into an emotional frenzy, generally find similar reactions in their audiences Conversely, as we attempt to soothe and calm others, we find ourselves becoming more calm and collected The contagiousness of emotions should be fully appreciated by teachers the teacher's calm, especially in his voice, will do much to dispel restlessness and tension in his pupils

Moods are emotional states that are milder than emotions and last longer They are related to emotions in that they predispose the individual

toward a certain type of emotional behavior thus, an irritable mood makes one more susceptible to stimuli leading to anger Such moods may have a partial basis in certain inner states of the organism Ill health and fatigue may, for instance, lead to irritability but moods are also subject to habit and, as a result, are important aspects of one's personality as seen in the case of the person who is perpetually irritated or who is invariably jovial

PHYSIOLOGICAL BASIS OF EMOTIONS

Inasmuch as our understanding of emotions can be increased by a grasp of their underlying physiological basis, we now turn to a consideration of this topic From a neurological standpoint, emotions are under the control of the autonomic nervous system which—as opposed to the central nervous system that governs voluntary actions—is relatively independent of voluntary control This system consists of three parts [a] the cranial or upper, [b] the thoracic-lumbar or sympathetic, and [c] the sacral or lower As shown in the accompanying figure, all visceral organs and most glands have a dual set of nerve connections operating antagonistically to each other one set from the thoracic-lumbar perhaps activating a given organ while the impulses from one of the other two divisions act to slow it down A notable exception is the adrenal gland which is connected to the sympathetic division only without a check from the cranio-sacral division its function in emotions is to 'pour adrenalin into the blood which not only accelerates the heart beat but also increases the amount of energy immediately available to the organism through stimulating the release of sugar from the liver [1]

Cannon's emergency theory of emotions attempts to explain the above-mentioned physiological changes in terms of the organisms's mobilization of its resources in a fierce physical battle for survival Thus, in the case of fear or anger the heartbeat is quickened, adrenalin is poured into the bloodstream (which not only gives the individual more energy and fights fatigue but also favors quick coagulation of the blood in the case of an open wound), the pupils of the eyes are dilated, and so on At the same time, digestion is slowed down and even stopped as a means of conserving one's energies [2] These and the other physiological

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[1] Also involved in an emotion are (a) the hypothalamus which apparently coordinates emotional responses, and (b) the cerebral cortex which exerts some restraining and controlling influence upon them/

[2] It might be pointed out in passing that in view of these changes, certain emotions are automatically antagonistic thus love cannot thrive in an atmosphere of fear and resentment For the same reason, sexual frigidity and even sexual impotence can result from fear or guilt associated with matters of sex
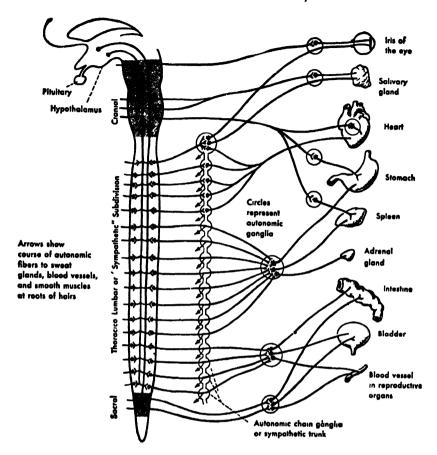
Fig 5 1 *The Autonomic Nervous System The brain and spinal cord are indicated at the left Nerves from the* cranial *division of the autonomic system go to organs in the upper part of the body, from the* sacral *to the lower part These usually act together and comprise the cranio-sacral or* parasympathetic *division The thoracico-lumbar or sympathetic division originates from the middle part of the cord, and sends fibers to all organs through the chains of ganglia shown The action of the sympathetic division is ordinarily antagonistic to that of the parasympathetic Adapted from N L Munn,* Psychology *(3rd ed) Boston Houghton Mifflin, 1956*

accompaniments of emotion appear to be particularly suited to situations involving physical strength and stamina and a number of stories are told of great physical feats done by persons under conditions of emotion John Colter [54], for instance, is said to have run miles at full speed while escaping from the Indians who had captured him In such a situation, the individual (or animal) who could work up a good emotion would probably have an edge in combat over his more unemotional adversary, per-

haps leading to a gradual change over the centuries in the emotionality of the species

In the average situation confronting modern man, however, these changes are likely to be a hindrance rather than a help to survival the person who panics while driving is likely to crash, for example It is generally true that strong emotions interfere with clear thinking and it is common practice to have people prepare for possible emergencies so that if these arise, they can act reflexively and avoid disaster Fire drills and much of the training given in the Armed Services are designed for such a purpose Thus, whereas for primitive man (and for animals even today) the physiological changes accompanying emotions increased his chances of survival, in the case of modern man they may actually be detrimental from this standpoint Furthermore, whereas in the case of primitive man, the adrenalin in his blood stream tended to be used up as a result of his combat or flight, in the case of the modern man it tends to remain in the blood stream and thus keeps him under tension unless he works it off through running around the block or doing some physical work If persistent, as in the case of worry or anxiety, this tension, besides leading the person to explode at the slightest provocation, could also be damaging from the standpoint of physical and mental health

These visceral changes are interesting from another standpoint, namely, the measurement of the existence and intensity of the emotion Thus, changes in blood pressure and in the electrical resistance of the skin, being relatively free from voluntary control, provide a rather dependable indicator of an emotional experience and, as a result, serve as ·the basis for techniques such as the lie detector Of course, emotions can also be appraised—perhaps less dependably—by means of observation, self-reports, questionnaires, and rating scales

Development of Emotional Behavior

EARLY EMOTIONAL REACTIONS

The infant at birth displays what might be considered emotional behavior True, it is not quite clear what emotion he is trying to express for, like all behavior of which the infant at that stage of development is capable, it is essentially nonadaptive and consists largely of generalized mass activity The question may be asked "Does the infant have emotions?" James [190], for instance, suggested that at birth the infant "assailed by eyes, ears, nose, skin, and entrails all at once" prob-

ably finds the whole thing "one great blooming, buzzing confusion" Watson [407] postulated three emotions in the newborn, namely, love, fear, and anger, and assumed these to be inherited Research into the problem has cast some doubt on his assumption but results have been inconclusive due to the inability of research to deal with the problem directly

Sherman [333] has shown that the newborn (under eight days) cannot express his emotions in such a way that people who are unaware of the nature of the stimulus can distinguish between his expression of such emotions as fear and anger Goodenough [146], on the other hand, found that adults did identify with better than chance success the emotions of the ten-month-old baby as registered on photographs What this means is debatable it might indicate that the infant at birth does not have emotions to express—or it might, on the other hand, show that he does not have the physical development required to express the emotions which he has It must also be noted in this connection that emotional expression is largely a matter of stereotype and that facial expression is only one and not a very important aspect of the total emotional expression Landis [223], for instance, points out that there is no single pattern of facial expression typical of any given emotion

It is probably logical to suspect that the infant does not have clearly differentiated emotions The fact that research in other areas where the matter can be investigated has shown that differentiation comes with maturation over the years would make it plausible to assume that his emotional development would not be sufficiently complete at birth to permit a full complement of fairly well differentiated emotions It is generally agreed, for instance, that the equipment which seems to be involved in an emotion, such as the hypothalamus and the cerebral cortex, are relatively undeveloped and inadequate for effective functioning at birth Furthermore it is not likely that he would have perceptions and understandings sufficiently clear-cut as to permit clear emotions Thus, the baby is defenseless but he very probably is unaware of the potential danger involved

DIFFERENTIATION OF EMOTIONS

Emotional development proceeds from a condition of general excitement or agitation to an almost unlimited variety of specific emotional behavior Probably the most thorough investigation of the evolution of the emotions of the young child is that of Bridges [42], the results of whose study are shown in the accompanying chart Thus, as shown, the first stage is that of general excitement or agitation, from which more and

more specific emotions gradually evolve Thus, excitement becomes **dif-**
ferentiated into distress and delight which, in tuin, give way to fear,
disgust, and anger in the case of distress and elation, affection, and later
joy in the case of delight Othei emotions such as jealousy appear later
The age at which the differentiation of the various emotions takes place
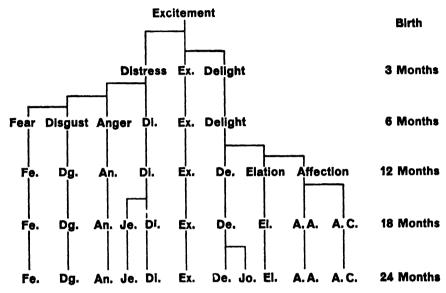
Fig 5 2 *The approximate ages of differentiation of the various
emotions during the first two years of life* A A = *affection for adults*,
A C = *affection for children*, An = *anger*, De = *delight*, Dg = *dis-*
gust, Di = *distress*, El = *elation*, Ex = *excitement*, Fe = *fear*, Je =
jealousy, Jo = *joy After Bridges* [42]

varies from child to child and, of course, intense emotional situations
occasionally cause—even on the part of adults—a regression to uncoordi-
nated behavior rather akin to that of the infant

The role of maturation in this connection seems relatively clear
Goodenough [146] found a blind and deaf girl to display the same emo-
tions as normal children despite the restrictions on her ability to learn
Similarly, Dennis [91] reports the case of two babies kept in a pen with
no cuddling or smiling from adults who smiled and also laughed at the
same age as other babies The role of maturation is also obvious in the
case of the love episodes of adolescence It is also likely that such tempera-
mental differences as can be noted from observing certain breeds of dogs
or horses predispose the organism toward certain types of emotions Thus,
differences in the glandular structure of different people (or of different
animals in any given species), which there are reasons to believe are in-

herited, would make for a tendency for one to become impatient and angry while another would be calm and possessed It is also true that such inherited traits as differences in physical size and strength might well make the difference between fear and anger as the result of a given situation

DECREASE IN OVERT EXPRESSION

An important aspect of the development of emotional behavior is the decrease that takes place with age in its overt expression This is perhaps at times accompanied by a corresponding decrease in the intensity of the feeling tone and the visceral and skeketal changes involved in the emotion, but this is probably the exception rather than the rule Moderation in the overt expression of emotions appears to be essentially a matter of learning the child learns that crying at the top of his lungs is generally frowned upon and, parenthetically, it is desirable that he should do so Moderation in expression may also reflect the acquisition of other means of expressing his feelings provided through maturation as well as changes in emotional susceptibility resulting from new needs, new goals, and new readiness In short, moderation in the expression of emotions is the result of the same multiplicity of forces that leads to the formation of a new self-concept, e g , "I am a big boy now!"

The influence of social demands on the self-concept is evident in the differences in the overt expression of emotions between the sexes In the case of girls, a display of fear is fully understood, in fact, it is almost expected as a way of making them appear glamorously feminine But, for the boy and the man a showing of fear must be avoided at all costs Likewise crying is more prevalent among women, a fact which can hardly be interpreted as indicative of a greater emotional capacity nor a greater degree of maladjustment This points to the need for caution in interpreting studies which show girls with higher scores on an adjustment inventory it may reflect nothing more than a greater willingness on the part of girls to admit they are sometimes afraid, they sometimes have the blues There are also considerable differences in emotional expression among various cultural groups, socio-economic levels and even sections of the nation

The decline in the overt expression of emotions which we have discussed, while in general highly desirable, is not without its drawbacks The person who puts on a brave front despite intense fear, who hides his anger behind a broad smile, the employee who laughs loudly at the boss's jokes and the hostess who smiles with joy as she welcomes unwanted guests, all are robbing emotional expression of its value from a

diagnostic and correctional standpoint This hypocrisy is generally harmful in that it not only gives the person the feeling that he is selling his soul but also because it can result in accumulated tension for, as long as the person suffers in silence, there is no opportunity to get at the cause Considerable harm can be done from a mental health point of view from this sort of silent smoldering, especially since such behavior is not oriented toward seeking a solution, and the situation in consequence is likely to last indefinitely There are reasons to believe that a good cry will do a lot for women in draining off tension as well as in improving conditions which brought it about, maybe a good punch on the nose of the offender would do the same for men, although the writer does not recommend it as a standard prescription

Changes in emotional susceptibility

There is also considerable change with age in the stimuli leading to emotions The stimuli affecting the child, for instance, are those of his immediate environment and those closely related to such inner states as fatigue, hunger, and illness Of course, even in adults the arousal of emotions depends on internal as well as external stimuli but the latter are generally more removed in time and space than they are in the case of the child Thus, the adult will become angry on reading of atrocities taking place at the other end of the world which do not affect him physically (although it affects him very vitally by attacking his dominant values, as we shall see) It is also worthy of note to mention that through his ability to foresee and to avoid difficult situations and to set realistic goals, the adult is able to control, to some extent, the type of stimuli he encounters and, therefore, the nature of the emotions he is likely to have

Also involved in what constitutes an emotional situation is the nature of the stimulus in relation to the individual Thus, a threatened physical attack by a twelve-year-old is more likely to produce fear in an eight-year-old than in an adult On the other hand, it must be remembered that it is what the situation means to the person rather than its objective nature that is important in determining what emotion will be aroused and to what degree And, of course, one must not lose sight of such predisposing factors as fatigue, illness, hunger, the individual's security, his past habits, and his previously accumulated tensions

Emotional stimuli can best be understood in terms of the concept of needs as previously discussed anything that poses a threat to the satisfaction of needs is likely to produce an emotional state Thus, fear and/or anger are produced when the individual has some misgivings as to his adequacy relative to the demands of the situation an object in the

dark poses a threat to our need for safety, an examination for which we are unprepared or an insult in public raises a threat to our need for social recognition and self-esteem—all are potential stimuli for the arousal of an emotion When, on the other hand, the situation is such that the satisfaction of our needs is not at stake, it is handled in an objective, nonemotional fashion Thus, the big boy might casually laugh off the threat of a physical beating by the runt of the classroom but might react with anger or fear to a similar threat by a boy of his own size

Emotions are directly related to the concept of security And, the child who is insecure about his status in a group is likely to react with jealousy to any favor done others and to resent even the best intentioned criticism, in fact, the insecure child tends to react emotionally to any minor threat to his already shaky security This is more obvious in the case of the negative emotions like fear, anger, and jealousy but it also is true of the positive emotions Thus, although both the secure and insecure person need affection, the insecure person will be·more desperate and demanding and more likely to be jealous, since he fears that at any moment he might be jilted It follows, as we shall see, that probably the best defense against harmful emotional experiences lies in the area of providing the child with security and acceptance

The self concept is also directly related to the concept of emotions The individual s system of values becomes as much part of himself as the organs of his body and any threat to his values is as threatening to him as the possibility of direct attack upon his person The individual who idealizes fair play may be quite provoked at injustice against helpless people Thus, individual differences in values explain why what arouses emotion in one person may leave another quite unmoved A person for whom honesty is not a dominant value might not be too concerned about graft in public office, unless it actually took something away from him whereas another person with a different set of values might consider graft something to get excited about

Public Manifestations of Emotional Behavior

Life is full of episodes in which individuals singly or collectively display emotional behavior of varying degrees of intensity A brief consideration of certain public manifestations of such behavior may be helpful in promoting a greater understanding of its nature Our discussion might center around any number of emotional displays, such as the

ceremonial dances of primitive tribes or the violent demonstrations of mobs, but let us restrict ourselves to the more common situations in which the average American is likely to be involved

THE PEP RALLY

Whether organized by campus leaders to promote college spirit or by politicians and rabble rowsers to influence opinion, pep rallies rely upon the contagiousness of emotions and are designed for the purpose of bringing about enthusiasm for a certain cause or line of action It is usual for the leader to start off with some enthusiasm, feigned or real, and gradually to generate more enthusiasm as he goes through the motions of selling his point to others (probably through the operation of something akin to that postulated in the James-Lange theory) In a short time, some of the more susceptible listeners find themselves catching his emotion and soon social reinforcement from one listener to another causes the speaker's spirit to sweep through the group This phenomenon is demonstrated in an extreme form in some of the ceremonials of primitive tribes but it was equally apparent in the mass rallies held by Hitler at the height of the Nazi regime The exuberant fervor exhibited at football and baseball games reflects some of the same features And it may also be pointed out that the enthusiasm of the teacher for his work and for his subject can be developed if he will go through the motions— and what is more, it may also rub off onto students

THE RELIGIOUS REVIVAL

The religious revival is closely related to the pep rally in that it involves a rather tense emotionalized atmosphere In fact, the atmosphere is sometimes so highly charged that people have been known to faint, to fall in a trance, or to get up and walk leaving behind crutches that had been necessary for years A few years ago, the writer in his travels came upon an outdoor meeting in which a lady stood preaching on some aspect of religion to a crowd sitting on the grass nearby The preacher's hair was falling all over her face, her voice was so hoarse one could hardly hear a word she shrieked into the microphone, her arms were swinging wildly The situation had reached a high level of emotional frenzy

PATRIOTISM

Patriotism also involves an emotionalized reaction which, in this case, is oriented toward some group to which the individual owes allegiance Interpreted broadly, patriotism might cover group pride in one's

country, state, community, or even some smaller segment of the community or group That patriotism is a desirable thing goes without saying in fact, the writer at times feels that we Americans do too little, by comparison to what is done in some other countries, to instill in our youth pride in what America stands for In the same way, pride in our state, in our community, and in our immediate family is undoubtedly a desirable thing Nevertheless, one cannot overlook the possibility that such loyalty can at times be harmful, or more specifically, one cannot overlook the danger of its degenerating into provincialism and regionalism The same question could be raised about loyalty to any subgroup whether that group be a race, a nationality, a sorority or fraternity, a branch of the Service, a regiment, a company, or a clique A great deal of good is served by such loyalty not only does it provide support to some members who need this support while developing enough security so that they can go out on their own but, if the group goals are sound, it also provides a tremendous incentive for individual members to contribute to the attainment of worthwhile goals The Armed Forces, for example, encourage the development of *esprit de corps* at the unit level as a means of welding the men into a fighting machine, even giving them special insignia to facilitate identification with the group In the same way, some teachers encourage the development of class spirit, all of which is probably sound, for the group with which the individual is to identify must be sufficiently small so that he can visualize it and form a close bond with its individual members

At the same time, such loyalty may interfere with the growth of the members Thus, a fraternity or sorority may, in some cases, be continuing a situation of dependence and immaturity on the part of certain students, thereby depriving them of the opportunity of developing social and emotional independence Strong loyalty may be detrimental whenever loyalty to the in-group leads to feelings of superiority, rivalry, hatred, bitterness, and rejection of the out-group In fact, when loyalty to x–group makes it difficult or impossible to deal with non x–members on an equal basis, both sides have been hurt, for when our self-concept has become so narrow and restrictive that consideration of others is based on group designation rather than on individual traits and qualities, we deny both ourselves and others the full opportunity for growth and happiness This does not mean that we have to welcome everyone with open arms, but we have to be sure that our basis of rejection is sound Thus, we might well live by a set of values which involves rejection on the basis of dishonesty, immorality, and cruelty but not of foreigner, Asiatic, Jew, or Negro, of communist but not of Russian

Some Common Emotions

A complete discussion of the many emotions of which man is capable would, of course, be impossible and would probably serve no useful purpose But, there is need to consider some of the major emotions for they are basic to an understanding of the child

ANGER

As we have seen, Watson postulated anger as one of the three basic, presumably inherited emotions, present in all children at birth This view has been more or less discredited by such studies as that of Pratt and his co-workers [301] who found that anger patterns seem to incorporate a substantial amount of learned behavior Anger appears to be somewhat of a composite emotion ranging from blind rage to annoyance and general irritation and touching rather closely upon such emotions as hatred, resentment, and jealousy to name but a few As stated previously, anger is aroused as a result of the threat to certain needs of the individual In this sense, it has the same background as does the emotion of fear, namely, the individual has no ready response in a situation which is threatening, but with one difference in the case of anger, the individual is not completely overwhelmed by the threat, so that he sees the possibility of fighting back, whereas in fear his only salvation appears to be in withdrawal from the situation The physiological changes are the same in both cases and it is not uncommon to see a vacillation from one to the other as the fight between two boys turns to favor one then the other of the opponents Anger may result from a threat to the satisfaction of the individual's needs and generally occurs as response to a blow at his self-esteem or to interference with his goals, habits, or activities The likelihood of its occurrence is increased by such internal conditions as fatigue, sleepiness, illness, and tensions resulting from previous annoyances Goodenough [144], for instance, found a considerable relationship between anger and the child's health, past and present It is also a common observation that tempers are often short just before lunch or dinner Anger also results from threat to one's sense of values as might be involved in cases of social injustice and brutality and it may carry over from the object responsible for its occurrence to other objects relatively remote as in the case of feuds with a whole family, clan, or even race as result of an altercation with one member

The immediate stimuli that cause anger are numerous and varied, de-

pending on the nature of the person, his capability, his security, his past experience and, of course, the nature of the situation in which he finds himself Generally, the incompetent, for instance, would be more prone to fear whereas the competent would be prone to anger or possibly to no emotion, if he saw the situation as nonthreatening Young children usually get angry at restrictions imposed by adults or by their own incompetence, e g , their inability to get possession of a toy Older children find that as their abilities increase so does the complexity of the situations they meet anger among adolescents, for instance, very often concerns social situations such as embarrassment before members of the opposite sex By that time, of course, the pattern of adjustment which they have learned as a result of meeting previous situations is an important determinant of the number and intensity of their anger reactions

An important aspect of the stimuli to anger is their cumulative nature Thus, a person gets a bit tense at the frustration of a given need but he can keep the overt expression of this tension under control As more and more frustrating situations occur, tension mounts till the time comes when a minor incident triggers action and the individual explodes much to the amazement of all but those who are willing to think in terms of behavior and its causes Thus, people who are angerprone or who display unusual hostile behavior might be suspected of having varying degrees of unreleased tension Similarly, a quarrel on the way to school, a run-in with or a dislike for the first-period teacher may well influence a child's reactions for the rest of the day in a way even he cannot understand

It is also true that, in the case of some persons, early frustrations have left them with a deep-seated sense of hostility and resentment that causes them to have a chip on the shoulder This pertains to adults—and to teachers—as well as to children and it is not a rarity for teachers to step into the classroom with an I ll show them" attitude Whenever a person is operating on an abnormal drive to be someone to outdo others, one may suspect underlying unresolved anger In the same way, whenever a teacher feels especially annoyed at the behavior of a particular child— or even at the child himself—he may well start looking for unresolved hostility in his own make-up It may be a case of projection in which the teacher is annoyed because what he sees in others represents something which he resents in himself Very hostile adults are sometimes able to repress their hostility to the point of being among the most polite—which may account for the milquetoast who "wouldn't hurt a flea" but who takes sadistic delight in being annoying or who becomes involved in a violent crime Dealing with cases of unresolved hostility is generally a difficult

proposition although, in an atmosphere of security and acceptance, such persons may gradually lose their defensiveness when they find no need for it

Not only is there a change with age in the stimuli that lead to anger but there is a definite need for the child as he grows older to express anger more subtly In fact the child is no sooner able to put on a good temper tantrum—kicking, biting, upsetting the end table—than adults demand that he restrain himself By the time the child reaches his second year, he begins to learn that it doesn't pay to express his anger too directly and too vigorously Thus, Goodenough found that temper tantrums reached a peak around the third year after which they declined in frequency and intensity, but that there was a corresponding increase in the amount of sulking and other indirect forms of retaliation or of showing resentment In a sense, the child learns a certain degree of hypocrisy in concealing his anger from others, and to some extent, even from himself—which, of course, complicates the problem connected with understanding him

The development of the use of language provides the individual with a new tool with which to express his anger more subtly but it also provides him with new sources of annoyance such as being ridiculed, being called names, being criticized, or even hearing annoying reports At any rate, unless his temper tantrums are rewarded, he learns less direct and less violent ways of retaliating for attacks and the middle- and upper-class adult rarely uses his fists (although fighting is common in the lower socioeconomic classes) but rather he makes a sly or cutting remark behind the offender's back, relies on ridicule or barbed witticisms and other indirect ways of getting even In school, the child expresses his anger by such antics as being noisy, accidentally dropping a book, being delinquent, asking questions just to embarrass the teacher, failing to co-operate, and "making it tough" for the teacher These devious ways used by the school child in expressing his anger are only partly effective in removing tension and, at times, they lead to repercussions that make the original source of annoyance pale by comparison Thus, the student has to tread a narrow path while getting sufficient revenge to restore his status and his self-esteem without, at the same time, incurring the wrath of the teacher to the point of his taking further steps

The evaluation of anger as an aspect of behavior is a matter of analysing each individual instance rather than one of making a blanket endorsement or condemnation Quite often anger, especially if violent and if directed at others, only serves to aggravate the situation it is meant to cure The individual who gets angry at his boss over criticism of his work may lose his job which will not only aggravate the frustration of his needs

but also introduce new difficulties from the practical standpoint of putting groceries on the table, bringing distress to others, and the many other problems such a situation may entail Of course, he may rationalize and project the blame on his employer to the point of deriving a certain feeling of satisfaction (rather than guilt) at having lost his job

There are, however, cases where anger may be desirable For the milquetoast who has always allowed others to walk all over him to get sufficiently angry to tell somebody off might represent an improvement in adjustment and result in benefit to all concerned. (Teachers have a responsibility to teach children what the situation calls for) Similarly for parents who let their children do whatever they please, it would be a blessing if some situation got them sufficiently angry for them to lay down the law In a different direction, there is the person who has improved his performance as a result of the annoyance caused by his own incompetence No doubt, if it were no more annoying to fail than it is to succeed, there would be a great deal more failure than there actually is Anger is even used in psychotheraphy by getting a patient sufficiently angry so that he will do something for himself has sometimes worked where everything else has failed In summary, anger is not bad per se . its worth depends on the purpose for which it is used and the direction in which it is channeled

As mentioned previously in connection with emotions in general, the most effective way of dealing with anger is through the two-fold program of building up the child s sense of security and developing in him certain competencies so that there will be less discrepancy between his ability . and his aspirations, or the demands made upon him These two aspects are closely related in that the secure child is more capable of devoting his energies constructively in building up skills and competence which, in turn, lead to a greater measure of success and to greater feelings of security

Anger is often aroused by the lack of courtesy and consideration on the part of others, and especially of those in authority There are people who have the tact of a bulldozer, who cannot even say "good-morning" without antagonizing someone In the classroom, as elsewhere, the occasion sometimes arises where criticism needs to be given this is inevitable, but it is possible to criticize without hurting feelings The first consideration is that the child be capable of taking the criticism if he is insecure, his self-concept will only force him to close his mind on the criticism while blaming the giver or, in some way, rationalizing his part in the situation Under such circumstances nothing has been gained the teacher has only succeeded in making an enemy and in proving to the child that he is

unfair in using his authority to lord it over him It would have been better to wait and praise him for good work since he needs to be built up, not torn down It is generally an effective technique to sandwich whatever criticism one has to give between praise, i e , to get the child in a receptive mood for accepting criticism constructively by first raising his ego and later finishing with some positive expression of confidence in his ability to do good work He must be left more capable of doing well and more eager to do so as a result of this criticism or the teacher hasn't accomplished anything more than getting things off his chest, and perhaps hurting the child

It is better to avoid getting children angry and to soothe feelings when they become tense It is a good policy, for instance, to avoid unnecessary restraint in the form of rules and regulations, particularly when those run counter to basic needs Thus, insisting on quiet for long periods of time is likely to lead to restlessness on the part of pupils in a class and make them receptive to stimuli leading to anger It is in good Army tradition to limit rules and regulations to those which matter and can be readily enforced A teacher gains relatively little in terms of status, respect, and cooperation when he uses his authority to squelch the expression of annoyance on the part of students stemming from needless restraint, inconsistent or impossible demands or a poor classroom atmosphere as stated by Crow and Crow [80], the teacher who meets temper with temper, besides giving public proof of his lack of self-confidence and self-control, is not going to be effective in dealing with either offense or offender Unfortunately, such situations do occur in the classroom, some teachers might profit from studying the Dale Carnegie approach to "winning friends and influencing people"

However, even when the child is reasonably secure and capable of taking criticism, it should be constructive and directed at unsatisfactory behavior and not at the child for there is no point in destroying his security To the extent to which criticism leads him to see himself as useless, unworthy, or even a poor student in a subject field, it will only serve to make it more difficult for him to do better Harping on shortcomings only destroys the child and causes him to become anxious about the future to the point where he is unable to devote his energies to the solution of the problems he encounters—which, in turn, gives the teacher more cause for criticism On the other hand, when a policy has been established or an order given (assuming that it is basically sound), it should be enforced It is quite probable, for instance, that many children make use of temper tantrums simply because parents unknowingly train them in using fits of rage as a means of getting what they want a point which was cor-

roborated by Goodenough's findings that the display of anger among children increased with the extent to which the home gave way to the child Actually, anger can be too successful in enabling the child to get his way and adults need to be firm the child should be made to understand that there are more constructive ways of obtaining what he wants and the display of temper should not be rewarded into becoming a habit

FEAR

Since fear arises out of situations by which the individual is relatively overwhelmed, the very idea of fear implies incompetence and the greater the degree of incompetence, the greater the likelihood and the severity of the fear In fact, overprotected children are likely to fear just about everything, including the idea of growing up which will involve them in more complicated situations and deny them the protection of friendly adults Unfortunately, such situations may result in self-defeat for the more insecure the child is, the more desperately he fears failure and the less constructively he can work toward developing his assets to ensure success

As with anger, the overt expression of fear becomes more subdued with age This is particularly true among boys, who are led to see themselves as heroes rescuing damsels in distress and who can, therefore, not afford to be afraid—or perhaps more correctly, to let anybody see they are afraid In a way this is desirable, but it has the undesirable feature of forcing the individual to avoid fear-producing situations—thereby depriving him of the opportunity to learn

Also, as in the case of anger, the stimuli leading to the arousal of fear change with age Thus, the infant is afraid not so much of a loud noise or a sudden dropping in space, as Watson believed, but more generally any stimulus that is intense and unexpected As he becomes older, certain stimuli lose their power over him and are replaced by others In later childhood, for instance, fear of the imaginary is both common and hard to deal with [1] And, as was the case with anger, the effectiveness of a given stimulus in bringing about fear depends on a number of factors such as the emotional security of the person, the situation in which he finds himself, his previous experiences, his health and current mood, and of course, the nature of the stimulus

Fear of snakes and certain other animals which is not present in the infant but which appears almost invariably somewhat later is difficult to

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[1] Particularly questionable is the practice of reading to young children fairy tales about witches and goblins just as they are being put to bed—in a dark room with nothing to do but to imagine!

explain It is probably true that learning plays an important part in the development of such fears The maturation of the child's sensory and perhaps mental capacities enabling him to make discriminations and to see dangers heretofore unperceived may also be involved Research [360] has shown, for instance, that although babies smile indiscriminately at faces nodding and talking to them, regardless of the nature of the facial expression, they are later able to display different emotional reactions to pleasant and unpleasant expressions and, of course, to strangers and persons they know

The list of things the child fears is, of course, long and varied, animals, ghosts and the imaginary, the dark, examinations, failure, the teacher, strange people, men from Mars, rejection, ridicule, social incompetence, noises, fear of falling, bodily injury, sickness to name a few Most of these the child has learned, probably incidentally, as was suggested by Hagman [162] who found a correlation of 67 between the number of children's fears and those of their mothers Many fears simply grow through the process of association if the child has been frightened in a given situation, he will tend to be afraid of similar situations and, for that matter, of any situation in which he can recognize some of the elements of the situation that frightened him For this reason, fear of animals may include many animals that are completely harmless and, likewise, the child who is afraid of a rabbit may also be afraid of all furry things including a woolen mitt

Fears can be good or bad depending on their specific nature and their severity Mild fears provide the thrills that make it possible to enjoy a roller-coaster ride or even a game of chance It may even be involved in the child's throwing of a spitball at another child or at the blackboard—and parenthetically, many teachers encourage misbehavior by introducing a cat-and-mouse situation which is challenging to students In the same way, vicarious fears make possible the enjoyment of a mystery story At the opposite end of the continuum, the disruptive fears that cause people to stand frozen in horror or to faint are very rarely, if ever, useful to anyone, except possibly as a drastic deterrent to future misbehavior

In the more normal range, the element of fear makes for a certain amount of prudence and caution which not only deter people from unsuitable behavior but may also lead to positive behavior, e g , a certain degree of preparedness It is, of course, questionable whether the job could not be done more effectively through positive motivation, yet, fear of the law and of Hell keep many on the straight and narrow path and certainly a good scare may lead one to mend his ways when other means have failed On the other hand, while there is something to be said for

teaching the child fear of certain things, very often the fears people have are completely out of proportion to the dangers involved, if any, and the harm done by these fears from a mental hygiene as well as a success point of view is often far greater than any possible harm that could result from the situation itself In the meantime, by causing the individual to shy away from the feared situation, fear promotes later failures The child does not know what to fear his reactions range all the way from dread of harmless things to complete unconcern for things that are definitely dangerous The case against fears is well stated by Kingsley and Garry in the following quotation [212]

> The great bulk of the fears that torment children and adults are needless and detrimental Fear is the enemy of mental and bodily health Its destroys courage and self-confidence and undermines morale It weakens and suppresses purposive action, distorts perspective, and inhibits clear thinking It lessens the chances of success, and is often the cause of mediocrity and failure   .

It does not follow that we should—if we could—eliminate all fear-producing situations for too few fears might lead to complacency and not only preclude progress but also invite disaster However, excessive fears that cause distress and prevent—rather than promote—constructive action can only be detrimental

Adults often play on the child s fears as a means of securing his good behavior even to the point of threatening him with the bogey man if he misbehaves Such threats are doubly devastating to the child first they involve a mysterious agent which, as far as he knows, might be tremendously frightening and against which he cannot prepare a defense, secondly, he realizes that if he misbehaves he cannot count on the protection of the parent since the latter was instrumental in getting the bogey man after him Besides since the threat never materializes, it tends to be a rather stupid way of controlling children Occasionally, Father is cast in the role of the bogey man by the mother "If you don't behave, I'll tell Father when he comes home' Frankly, the writer has much sympathy for the housewife with children under foot all day but this is a very negative approach and Father deserves better! And so does Mother, for such tattling tends to destroy the relationship between mother and child, father and child and often father and mother Some parents of preschool children also turn the teacher into a bogey man—thereby doing their children harm in terms of adjustment to school• Actually, children are far too often disciplined through fear the more' positive approach of incul-

eating respect rather than fear of parents, policemen, teachers, and adults in general would benefit all concerned

Also of primary concern to the teacher is the fact that, for many children, the school is a severe fear-producing situation from which they have absolutely no escape Throughout the day, it is one continuous procession of fears fear of criticism, fear of rejection by the teacher and/or the group, fear of punishment, fear of embarrassment, fear of examinations, fear of ridicule Our emphasis on academic learning has caused us to forget the price some children have to pay in terms of emotional distress one study [44], for instance, showed strong visceral effects resulting from examinations Perhaps this is a matter which might be of interest to the Society for the Prevention of Cruelty to Children! In the meantime, children by the dozen have built their defense against such a situation they have simply ceased to care about schoolwork, they have developed a system of values which centers around "being tough" and being disinterested in the work of the school and its "old teachers " This is the situation with which many teachers struggle—and it is of their own making, or at least, the making of previous teachers who have failed to realize the complete ineffectiveness of a program based on fear!

The most constructive way of protecting the child against fears consists of the dual approach of helping him build up his security and his competence The child who has been able to cope with previous situations approaches life with confidence and, as a result, uses his energies constructively in surmounting difficulties rather than dissipating these energies in fighting fears It also helps to present threatening situations under conditions where the child is secure—perhaps in his home, when he is with friends, or at least in familiar settings [4]—and at all times, the child should be able to withdraw if he should want to It is also appropriate to mention here that the classroom should be a place in which the child feels secure so that he can devote his energies to learning without fear of jeopardizing his status Other suggestions for dealing with situations that are likely to cause fear in the child include giving him advance notice as to what to expect,[5] explaining what is involved (as in the case of lightning), and distracting the child while the feared situation is gradually introduced

The removal of fears, once developed, is generally a slow and diffi-

[4] In general, however, mothers of children in the first grade or kindergarten should not be allowed to stay with their youngsters on the first day of school The mothers who want to stay are often the very ones who should not

[5] Advance warning, on the contrary, may panic the child into believing that it must really be something dreadful for the adults to warn him in advance He may actually build up such apprehension that the result will be greater rather than lesser fear of the actual situation

cult process To be sure, many fears are lost in the process of growth
without conscious efforts on the part of the child This is most likely to
occur when adults accept the child's fears as normal and limit themselves
to providing encouragement and moral support It is least likely to occur
when they make such a fuss about his fears that he has to become de-
fensive Precept and ridicule are rarely effective and may actually be
harmful To call a child a sissy because he is afraid of the dark is not
helping him build a positive self-concept it simply forces him to close out
the adult because he cannot have conflicts in his self-image It will also
make it all the more difficult to reach him in other matters as well
Verbal reassurance and explanations may be helpful, but it must not be
forgotten that emotions are not matters of logic Imitation is somewhat
more effective, particularly if the person serving as the model is a person
the child respects Hence, parents and teachers should themselves be
calm and confident if they expect to keep the child from harmful fears
Social facilitation, i e , imitation in a social group is generally more
efficacious than any of the techniques mentioned so far

The most efficient way of removing fears is through the process of con-
ditioning—which, incidentally, is just as effective in developing fears as
it is in removing them As shown schematically in Figure 5 3, the re-
peated simultaneous presentation of two stimulus-response bonds is
likely to result in an association of the stimulus of the weaker bond to the
response of the stronger so that this stimulus alone is sufficient to elicit
the latter Thus, in Watson's well-known study [409], fear of a rabbit to
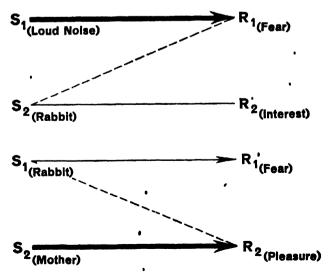
Fig 5 3 *The conditioning of an emotion*

which the child was quite attracted was conditioned by striking cymbals behind his back just as he was reaching for the rabbit Watson also conditioned the opposite response, 1 e, he removed the fear of the rabbit by gradually presenting the rabbit while the baby was secure in the arms of his mother The same procedure can be used by parents to eliminate their child's fear of the dark they can, for example, play ball with him, gradually allowing the ball to roll farther and farther into the next room which is less well lighted Care must be taken in all conditioning that the desired response is attached to the stronger of the two bonds otherwise, the process might well backfire with the child associating his parents with the idea of fear rather than the dark with the response of pleasure It is important that the object or situation to be conditioned be introduced very gradually so that at no time does it threaten the desired response It should be noted also that the process of conditioning provides the child with greater contact with adults and this very fact may increase his security which may, in turn, be partially involved in the removal of·the fear

PLEASURE

Pleasure, whether in the form of the quiet satisfactions in daily life or the more violent joys, is essentially a matter of the satisfaction of one's needs—or to be more correct, of one's motives Thus, the attainment of food, affection, or social recognition is pleasant only when it gratifies the individual's needs in the way he has learned to gratify them As we have seen in Chapter 2, the individual seeks, not food, but a certain kind of food and inability to obtain this kind of food may result in considerable frustration despite the fact that there is no lack of food with which he could satisfy his hunger

Consequently, if the teacher is to be successful in making the classroom the pleasant place it must be if it is to be conducive to the maximum development of children, he must be familiar with the nature of their needs and purposes and the means whereby they can be helped to achieve their goals School presents unlimited opportunity for satisfaction of the motives of children within the framework of the curriculum it is up to the teacher to take advantage of opportunities that exist in order to make school experiences more productive by making them more pleasant

An important source of pleasure is activity the young child enjoys sheer exercise and he will romp and run for the fun of it, the somewhat older child likewise derives much pleasure out of exploring and experimenting, out of trying something new The school is missing a good bet

when it fails to capitalize on the pleasure involved in getting done the things one sets out to do or of overcoming tasks which had previously proved too difficult The child has a zest for doing things that are new, things that are challenging, and certainly the school curriculum is not devoid of interesting and challenging experiences that can be integrated with the child's goals and purposes Unfortunately, teachers often stifle enthusiasm by introducing one topic after another in a monotonous routine as something the child *has* to do rather than as something he should be *eager* to do

It is important to appreciate the importance of the word *challenging* as it applies to the above discussion In a sense this is the key to successful classroom operation, implying as it does ascertaining that the child has set for himself goals that are meaningful and realistic and that he is channeled to attain them Once he is ego-involved, there can be no slipshod work, no half-hearted effort It must, of course, be remembered that what is challenging varies from person to person and even from time to time in the same person as his abilities and interests change For the dull child, schoolwork is often a source of frustration rather than a challenge The gifted child, on the other hand, is often consistently denied the pleasure of challenging work, sometimes with disastrous consequences for his natural zest for excitement will lead him to seek it elsewhere if schoolwork offers nothing but boredom

Other sources of pleasure include success, praise, and reward, all of which relate directly to the satisfaction of one's motives and require no discussion beyond what has already been said on the latter topic Nevertheless, because of their importance, they will be mentioned again in a later chapter dealing with motivation This might appear to the reader as duplication but it just so happens that the individual is a functional unit and the various aspects of his growth and his behavior are so interrelated that they can be understood only in relation to each other

The importance of the classroom being a pleasant place has been pointed out It might even be well to make clear that certain activities can be justified in the curriculum on the sole basis of the pleasure they provide It is also true that teachers are often unnecessarily stingy with such things as praise and, at times, inexcusably incompetent in organizing the work of the school so as to provide experiences that are challenging and educationally satisfying On the other hand, life cannot be a continuous round of pleasure, success, reward, and praise not only is the occurrence of unpleasant situations unavoidable but it probably would not be desirable for the child to be saved from all unpleasant situations

even if this were possible It is likely, for example, that the true satis-
faction of success might not be appreciated, if one had never experi-
enced failure However, teachers need not go out of their way to provide
children with failure situations, there will be plenty of such situations
arising without special effort being made to provide them The successful
child is a secure child and a secure child will want to tackle things that
are big enough that the occasional failure is bound to occur

Another important source of pleasure in our culture stems from
such media as television, movies, comics, fiction Their ability to pro-
vide pleasure derives from the fact that they enable one to satisfy his
needs vicariously through identification with the characters of a story
That movies are not a relaxation—at least for the glands and organs
involved in emotions—has been shown by a study [102] of the visceral
changes occurring while attending them These are not necessarily
harmful, unless they are violent after all emotions are a fundamental
aspect of life .These sources of pleasure may have detrimental effects
upon the individual from a long-term standpoint in that, just like day-
dreaming, they may provide sufficient satisfaction for his needs as to
relieve him of the necessity of gratifying them in actuality The adoles-
cent girl whose social incompetence makes it difficult for her to satisfy
certain needs of being loved and accepted may resort to the reading of
love stories and thus drain off the tension that would otherwise force her to
learn social skills

 ' Where children make excessive use of these media, it seems safe to
suspect that they are having considerable difficulty in supplying their
needs in more realistic ways, and that excessive use is the result, rather
than the cause of maladjustment The same explanation would probably
apply to cases where delinquency has followed the seeing of movies or
the reading of books, although to be sure, the material found in certain
movies or magazines might intensify tendencies already present in the
reader or viewer On the other hand, Healy [172], in his book on the
delinquent, points out that movies and comics may have a detrimental
effect on the moral development of the child in that they may satisfy the
child's needs at a very low level and in that one can develop a craving
for cheap novels or movies just as one develops a craving for alcohol
It may even be that such material leads to delinquency through a gradual
and cumulative effect and supplies a trigger mechanism that sets it off
There is no question but that television and motion pictures feature an
unnecessary amount of crime and other forms of undesirable behavior
which may, in the case of certain children, work to negate the teachings
of the home and the school ·But, it is probably not correct to blame all

maladjustment and all delinquency on T V , the movies, or the maga-
zines maladjustment and delinquency, unfortunately, existed before
man ever got around to these modern inventions

AFFECTION

Affection is one of the basic psychological needs of the individual
It is also one of the three emotions postulated by Watson as present at
birth, a position which is subject to question since most authorities are
inclined to believe affection can be explained on the basis of learning
through the process of conditioning It is, of course, worthy of note that
the crucial thing is that the child is born with the capacity for love

However, regardless of its origin, its importance cannot be over-
stated, especially in early life as we have seen, it was commonplace years
ago for babies who had to be hospitalized for extended periods of time to
waste away as a result of the deprivation of their need of affection Many
modern hospitals have a policy of allowing infants to stay in their mother's
room, a policy that has considerable merit from the standpoint of the
needs of both infant and mother The child depends on the affection of
his parents The process is reciprocal the parents depend on the affec-
tion of their children This mutual affection helps to satisfy the needs of
both children and parents and provides the basis for a happy and ad-
justed home life Teachers often cash in on the child's affection for his
parents to the mutual benefit of child and teacher In the same way, love
at first sight involves taking advantage of the favorable attitudes that have
been built up toward a third person thus, a girl may fall in love at first
sight with a boy simply because of some—perhaps trivial—association
which links him to her father or her brother for whom she has great
affection

The development of affection is characterized by four stages which
are rather distinct, although overlapping in terms of the age at which
they occur

Self-love The infant loves himself and is only interested in being fed
changed, amused Gradually since the mother tends to be present when
these satisfactions are provided, the infant comes, through the process of
conditioning, to look favorably upon her There is nothing innate about
loving one's mother many children have come to love their wet nurse
or foster mother more than their natural mother Gradually, the other
members of the family are also included through the same process

Whether a person ever grows out of this self-love stage to what might
be called altruistic love is, at least, open to question, and since we accom-
plish more by working in accord with the principles of science than by

trying to defy or to ignore them, it may be wise to consider the proposition that love is always more or less self-centered This may sound revolutionary and the writer has, on occasion, noticed young people who appear to be deeply in love with each other, but he still wonders if such situations cannot be explained most simply by the hypothesis that each is in love, not with the partner but rather with himself or herself, and that the partner in essence serves no purpose other than to help each satisfy his or her needs Thus, a young man will appear to be in love with a girl but, it must be conceded that being *the* one for a girl, particularly if she is in some demand, contains considerable possibilities in terms of satisfying needs of social recognition, self-esteem, achievement, and security as well as affection In a way, there is some similarity in this situation to the boy sporting a Cadillac convertible, in which case the nature of the thing does not allow for "love" Such an explanation makes it easier to understand the bitterness and hatred that often follows a breaking up of the couple

This idea is of tremendous import from a psychological point of view We do the child no service by insisting that he love his neighbor if that is not possible It seems to the writer that rather than deny the self-centered nature of love, a greater service can be rendered by helping the child expand his self-concept to the point of including an ever-enlarging circle of people and things Even the most self-centered person, for example, tends to widen his *self* to include a spouse, children, and a few members of the immediate family Self-centered love is thus not a repulsive concept friendships are based on the mutual satisfaction of needs, and choosing a mate has to be on that basis if the marriage is to last In fact, as pointed out by Jersild [193], unless the child loves himself, he cannot love others The key to the whole idea is to be found in this quotation from Woodruff [424]

> Self-centered behavior is not the same as selfish behavior Whereas all behavior is self-centered, only that behavior is selfish which consists of attaining personal satisfactions at the expense of others

Thus, what we need to do is to establish an enlightened self-interest, i e , we must come to appreciate the fact that we can attain maximum self-realization only by including others into our phenomenal self We must come to realize that the welfare of others is essential to our own welfare and that selfishness is a very shortsighted policy There is nothing wrong with self-centered behavior, for again, to quote Woodruff, "Self-centered

behavior seeks the well-being of those who are brought into the personal realm, just as if they were the person himself" all that needs to be done is to have people expand this personal realm as indicated in Edwin Markham's little verse, "Outwitted"

> He drew a circle that shut me out—
> Heretic, rebel, a thing to flout
> But Love and I had the wit to win
> We drew a circle that took him in!

In fact, this is probably the true meaning of the precept, "Love thy neighbor as thyself" Our task, then, is one of helping the individual perceive his personal realm broadly enough so that he can include all those upon whom he truly depends for his maximum self-actualization The accomplishment of this would preclude selfishness, prejudice, graft, and corruption, it would involve full cooperation among people for the good of all and it would make for good leaders and good followers If we can implant that idea and help the child to put it into operation by means of participating in group projects where he learns to satisfy his needs through the attainment of group goals, no one need worry

The preschool stage This is the child's first contact outside his immediate family and constitutes an important learning experience from the standpoint of later adjustment to school During this period the child loves other children of his own age regardless of sex

The gang stage During this period, the individual's affection is directed toward members of his own age and sex There is, at this time, a rather distinct cleavage in social relationship between boys and girls

The heterosexual stage With the advent of puberty, the adolescent's affection undergoes a drastic change as it becomes directed toward members of his own age but in sharp contrast to its orientation during the gang stage, it is now directed toward members of the opposite sex An important determinant of this change is, of course, the sex drive which, as we have seen in Chapter 2, is often a major cause of difficulty in our culture and one which our schools need to face squarely Adolescents need to learn about members of the opposite sex and promoting boy-girl adjustment through social contacts should be among the primary responsibilities of the school At the same time, there is need to sublimate the sex drive through school parties, dances, coeducational class projects, clubs' Where contacts with members of the opposite sex are prevented, the affection of the child may be arrested before reaching the heterosexual stage, or it may at least be delayed, in which case, (as in all develop-

mental tasks) adjustment to members of the opposite sex will become progressively more difficult

Occasionally there arise problems in connection with affection which the teacher needs to understand if he is to be of maximum help in promoting adjustment in this important area of the child's life The discussion will be restricted to the following

Homosexuality Homosexuality is probably best defined in simple terms of the orientation of one's love and affection toward members of one's own sex at an age when heterosexual adjustment should have been attained This definition tends to be preferable to that in which the commission (or noncommission) of homosexual acts is the main criterion many homosexuals do not commit homosexual acts and many even marry and have children while, on the other hand, homosexual acts are sometimes committed by persons who are definitely not homosexual

The origin and causation of homosexuality are not clear Some authorities lean toward a physiological or medical explanation based on the premise that the orientation of affection is more or less governed by the nature of hormone secretions and that, in the case of homosexuals, there is an oversecretion of hormones of the opposite sex Other authorities on the subject feel that homosexuality is essentially a case of arrested development the individual simply did not get to the fourth stage, heterosexuality This view assumes that, perhaps because of some psychological or other form of blocking, the individual did not make the transition to loving members of the opposite sex and, because of the strength of the sex drive, was forced to make an adjustment of a homosexual nature It is conceivable, for example, that a mother who builds in her daughter a strong fear and prejudice against men may make the transition to the heterosexual stage next to impossible since the girl would have to destroy her self-image as a man-hater as'well as violate her loyalty to her mother in order to fall in love It may also be that the adolescent's first contacts with members of the opposite sex were unpleasant, that they caused a postponement of heterosexual adjustment past the period of optimal ease, and thereby prevented the transition from ever taking place

The research on the subject is quite inconclusive and, at times, contradictory but in general it tends to refute the physiological explanation it has been shown, for instance, that the administration of male hormones to male homosexuals simply intensifies the sex drive but does not change its direction On the other hand, there are indications that homosexuality may be due to failure in identification with the like-sex parent Bender and Paster [31], for example; found no basic physical femininity in homo-

sexual boys nor basic physical masculinity in homosexual girls but they did find in the cases investigated an absent, abusive, or ineffectual like-sex parent (with whom the child could not identify) together with a more dominating or considerate opposite-sex parent so that identification took place with the wrong-sex parent The problem needs further investigation, particularly in view of the lack of acceptance of homosexuality in our present culture

Adolescent crushes Crushes may vary from the violent love of two adolescents of the opposite sex to somewhat similar situations between two adolescents of the same sex or love of an adolescent for a much older person They generally reflect, on one side, the strength of the sex drive spurring adolescents to seek love and affection and on the other, the strength of rejection attitudes toward members of the opposite sex in their own age group, which they incorporated into their self-concept during the gang stage It is not uncommon for a young male teacher in high school to be the object of considerable affection on the part of some girls in his classes This is understandable from a psychological point of view but it does call for diplomatic handling

Mother fixation (Momism) During the last war, many young men called up for military service had to be rejected because of emotional immaturity—because of being tied too closely to "Mamma's apron strings " It is not uncommon to find, for example, men in their thirties and forties who are so closely attached to their mother that they consult her on every decision and generally display toward her the type of behavior which would be appropriate for a preadolescent Often they do not marry—"It wouldn't be fair to Mother!"—or if they do they seek some older or more maternal woman whom they can cast in the role of a mother rather than a wife

The cause of Momism is not clear but a rather convincing case may be built up in support of the view that it can result from smothering by an emotionally insecure mother Occasionally, teachers have a boy in school whose mother accompanies him to and from school, who dresses him in such a fashion that he cannot take part in active play, who is always afraid her "little darling" will get hurt By depriving him of the usual opportunities to learn and to establish his independence, she causes him to depend more and more on her for the satisfaction of his needs Sometimes the boy will rebel and break away—usually with much unhappiness to both son and mother—but many of them, not having learned ways of being on their own, find themselves unable to shed their emotional shackles

Emotional Maturity

We constantly encounter instances of infantile emotional behavior—temper tantrums jealousy, resentment, despondency, dependence upon others—not only among children and young people but also among people who are supposed to be grown up In fact, such behavior is so commonplace that one is sometimes almost led to consider it the thing to be expected Perhaps the fault lies partially with the school's past emphasis on academic growth of the child and corresponding neglect of the other phases in his development Such emotional behavior may also reflect the fact that, whereas we have a sizable body of data on the most effective ways of promoting the child's academic growth, we are relatively uninformed in the area of promoting his emotional growth

If we, as teachers, are to be successful in guiding the growth of the child in the area of emotional development, it is necessary that we be familiar with the goals toward which we are to strive Actually, emotionally mature behavior is so complex and so interrelated with other phases of the child's total growth that any discussion of its various aspects must perforce do violence to its true nature The following signs of emotional maturity are simply illustrative, no attempt having been made to list all its components

The emotionally mature person leads a rich emotional life and has a large number of sound emotional patterns well integrated with the rest of his behavior Far from being an emotionally flat milquetoast, he knows what situations call for and, rather than repress his emotions and suppress their expression, he channels into constructive behavior the energy which they generate The emotionally mature person is secure He has a realistic appreciation of his worth, his strengths, and his limitations He accepts himself for what he is so that he does not have to resort to prejudice and intolerance or to keeping up with the Joneses as a way of maintaining self-esteem He is relatively free from slavish conformity to group standards and dependence upon others He is also relatively free from anxiety and can, therefore, devote his energies constructively to the solution of his problems He has adjusted his level of aspiration to fit his abilities and has developed competence in areas where it matters so that he has confidence in himself He has also developed a mature sense of humor and a positive outlook on life and can therefore save himself from devastating emotions such as worry and jealousy

As as result of his being secure and his having constructive channels

through which to drain off emotional tension, he is not only relatively free from unnecessary tensions but, as a result, is capable of exercising control in the face of emotional stress Furthermore, his security frees him from an overconcern about himself, and he has achieved a relatively high degree of enlightened self-interest so that he derives pleasure and satisfaction out of life through contributing to the welfare of others The emotionally mature individual also has a number of sound emotional habits which are in harmony with the maximum welfare of the individual and of others For example, he maintains a fair balance between work and play, he has found employment at a job which provides challenge as well as security, he takes part in creative and recreational activities, he has attained stability in his personal life by having made a satisfactory marital adjustment, he saves himself from conflict and guilt feelings by acting in accord with a sound moral and social code and, above all, he has a purpose in life and he maintains a zest for living

Implications for the School

Even though the school has accepted, as one of its major responsibilities the guidance of each child's emotional development it must not forget that, because of the importance of early experiences upon emotional growth, the influence of the home is even more fundamental than that of the school The child who, in his early years, has experienced emotional security and whose needs are essentially met in the home can face the world and its problems with confidence and can tolerate the frustrations he is likely to meet This, of course, does not imply that there is nothing the school can, or need, do for the child by the time he enters grade one and that it is, therefore, relieved of any responsibility in the matter Many children are not provided with security at home and have to rely on the school to supply them not only with a home base but also with constructive outlets for the release of the tensions accumulated in other situations The school, meantime, will have to be careful that it does not itself generate harmful emotional tensions Although the school cannot—and should not—attempt to safeguard the child from all emotional situations, it can and should see to it that no one is faced with a steady diet of fear, failure, and frustration as a result of school-sponsored activities A certain amount of emotional tension (e g , motivation) is beneficial if the individual utilizes the energy which is generated to further the attainment of his goals However, when the tension is too great,

as in classes where competition is overstressed, the individual becomes so concerned with the tension itself that he is no longer able to devote himself to dealing with the problem confronting him It also appears that excessive motivation, for instance, is especially detrimental in the early stages of learning Emotional outbursts on the part of the child are an indication that the pressure on him is too great In such cases, the demands made upon him should be softened—or not only will his learning efficiency be impaired but definite harm is likely to result

The school will also have to concentrate on a positive program for the promotion of emotional maturity As we have seen, this is probably best done by a dual approach of giving the child security and providing him with help in locating constructive outlets through which to channel emotional tension He needs to find in his classroom an atmosphere in which he can feel secure from the standpoint of acceptance by his teacher and his peers A democratic classroom organization under a teacher with a sympathetic point of view and a sense of humor can go a long way in making the child feel that he belongs and that he can air out his frustrations without placing himself in danger of rejection or retaliation Given this kind of security and a degree of satisfaction for some of his needs, the child can withstand occasional frustration and profit from the experience

The school should stress emotional expression rather than repression Whereas it would be disastrous if everyone expressed his emotions without any attempt at control, adults are far too often concerned with having children repress emotional outbursts than they are with showing them how to express their emotions constructively Restraint is desirable but it can also be dangerous and the school would do well to plan for the expression of frustration and resentment as a means of draining away accumulated tension before it reaches the danger point Sports, for example, are often far more effective in releasing pent-up tension, both for the players and the spectators, than are constant bickering and behind-the-back grumblings School spirit is also an effective way of channeling emotional energy

Competent behavior is quite as dependent upon the proper education of the emotions as it is upon the cultivation of the intellect and the school must assume responsibility for such education Not only are emotions of sufficient importance in themselves to warrant our attention but they cannot be neglected since, if for no other reason, the effectiveness of the child's learning is directly related to his emotional state More important, of course, is the fact that continued tension leads to maladjustment,

i e , to a disorganization of behavior to the point where the individual can no longer deal effectively with his problems

The child can attain emotional maturity only when the adults with whom he comes in contact are themselves emotionally mature Unfortunately, many parents and teachers are lacking in this respect it is not uncommon to see teachers, for example, who are so insecure they forever lose their temper, who can criticize students but who can't accept the least hint of a challenge, who are frustrated and who take their frustrations out on children Obviously, no one can be expected to display all the characteristics of the emotionally mature person Yet, since teachers cannot guide children in areas in which they are themselves lacking, they need to strive for a certain degree of maturity They can, at least, be expected to have a positive outlook on life and a sense of humor that will enable them to appreciate the value of a good laugh in clearing the air of petty grievances and annoyances that interfere with student growth

HIGHLIGHTS OF THE CHAPTER

Emotions are such an integral part of the total personality that it is difficult to treat the subject as a separate topic without giving a false picture Consequently, the following points, important as they are, derive their full meaning only when interpreted within the framework of the other aspects of the child's total growth and development

[a] Emotions are complex affairs—consisting of various degrees of feeling, certain visceral and skeletal changes, and impulses toward certain reactions—which take place when the individual encounters a situation for which he has no ready pattern of response   .

[b] Emotional tension, if properly channeled, can facilitate the individual's handling of a situation, particularly if it calls for physical strength and stamina On the other hand, violent or continued emotional tension tends to be detrimental from the standpoint of both emotional health and effectiveness in dealing with situations calling for clear thinking   .   .

[c] The intensity of such emotions as fear and anger is roughly proportional to the degree of threat to the satisfaction of the individual's needs which he perceives in the situation Hence, as needs and competence change with age, there is a corresponding change in emotional susceptibility   .   .   .

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[d] There is a gradual decrease with age in the overt expression of emotions This probably is the result of cultural pressures

[e] Mild emotional tension, as might be involved in the usual levels of motivation, is of definite benefit to the individual When emotional tension becomes too severe, however, it impedes rather than facilitates learning since, in such cases, the individual tends to avoid the tension-producing situation

[f] Emotional maturity can be promoted through the dual program of providing the child with security and with outlets through which emotional tension can be channeled into constructive behavior

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QUESTIONS AND PROJECTS

1 Why is it preferable to speak of emotional balance rather than emotional control? Why is emotional expression generally preferable to emotional repression?

2 Discuss from the standpoint of both the recipient and the giver the intersatisfaction of needs involved in the case of sympathy

3 Pick out among your acquaintances a selfish person and one with a high degree of enlightened self-interest Compare them as to relative happiness and success

4 Discuss a few specific practices of the school which appear to be clearly detrimental to the child's emotional development What causes these practices to persist?

5 From the standpoint of present as well as later personal and heterosexual adjustment, what are the pros and cons of co-educational classes at the elementary school level?, at the junior-high-school level?, at the senior-high-school level?, at the college level?, What are some of the reasons one would choose to attend an all-girls or all-boys school? How would such a school face the problem of the heterosexual adjustment of its students?

6

Social Development

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*We cannot escape the fact that in school the child learns with
other people and a great deal that he learns will be used·in social
situations or in preparation for such use*

PRESSEY ET AL *

SINCE THE CHILD must live in a social setting, his social development is an
important aspect of his total growth and should be of prime interest to
teachers Social development is closely related to emotional development
as may be noted from considering the social implications of emotions
such as anger, jealousy, and love It also bears directly on such concepts
as belonging, social acceptance, and the self-image

Social development involves the ability to get along with others and
implies ability to get along with oneself Specifically, it is a matter of in-
tegrating one's needs and purposes with the needs and purposes of the
social world in which one lives In this sense, it is more or less synonymous
with personal and social adjustment and bears directly on the idea of
enlightened self-interest, discussed in the previous chapter

* Pressey, S. L et al, *Psychology in Education* New York Harper, 1959.
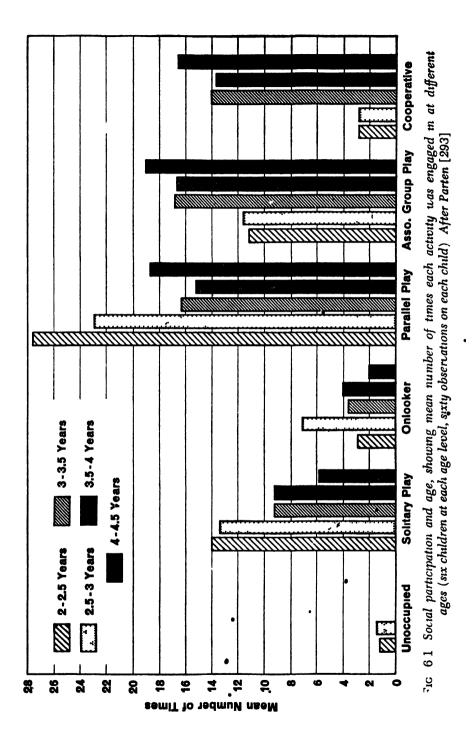
Development of Social Behavior

THE PROCESS OF SOCIALIZATION

Social development is a continuous process by means of which the child achieves social adequacy Involved in this process are two complementary phases, namely, [a] socialization which reflects society's attempt to have the child internalize certain of its regulations, values, and mores, and [b] individualization which refers to the child's attempt to retain some of his individuality while at the same time making certain concessions to the group in order to attain group acceptance Society, in order to maintain itself, must insist on a certain degree of conformity to its ideals and values but, while the child conforms in certain areas, he does so rather reluctantly and only to the extent that he finds it to his advantage in terms of satisfying his needs It is strictly a business deal involving both cooperative and resistant behavior whereby the individual buys group acceptance at a price of some of his freedom and his independence As noted previously, the secure child, being in somewhat less desperate need for acceptance does not have to conform so slavishly The ideal stage is reached when the individual can attain maximum satisfaction for his needs within the framework of the values of the society in which he lives to the maximum benefit of both (provided, of course, that the values of the society are sound)

Social development goes through a series of stages, which, although not rigidly demarcated from each other, represent steps in the growth toward social maturity Parten [293], for instance, whose data are shown in the accompanying figure, classifies social participation on the part of preschool children into six levels [1] unoccupied behavior, [2] solitary independent play, [3] onlooker behavior, [4] parallel activity, [5] associative play, and [6] cooperative play The young child is essentially individualistic and his first attempts at social behavior involve many a social contact in which his desires and needs are in conflict with those of others Thus, it is not before the end of the third year that cooperative play (as opposed to parallel play) becomes relatively fixed, and it is not before the age of ten that any teamwork of an effective nature can be expected with a degree of regularity A similar observation was made by Baker [17] who found that, in the second grade, 87 percent of the contributions to classroom discussion were in the nature of new topics while in the sixth grade only 23 percent were in that category

There are great differences in the social development of different children, even in the same family These differences can be explained on

FIG 6 1 *Social participation and age, showing mean number of times each activity was engaged in at different ages (six children at each age level, sixty observations on each child) After Parten* [293]

Legend:
- 2 - 2.5 Years
- 2.5 - 3 Years
- 3 - 3.5 Years
- 3.5 - 4 Years
- 4 - 4.5 Years

X-axis categories: Unoccupied, Solitary Play, Onlooker, Parallel Play, Asso. Group Play, Cooperative

Y-axis: Mean Number of Times (0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28)

the basis of both heredity and environment but there is a wide disparity of opinion as to the relative contribution of each Thus, the aggressiveness of the mesomorph may be explained by the proponents of the hereditarian point of view on the basis of a relatively overactive pituitary gland, environmentalists may hold that the mesomorph, finding himself physically capable of enforcing his demands by being aggressive, learns this as a mode of behavior while the endomorph learns out of necessity to be jolly and unobtrusive Evidence with which to resolve this ontroversy is, of course, lacking but there is considerable evidence to cause one to question the popular viewpoint that social development is *essentially* the result of environmental influence We have already noted in Chapter 3 that the degree of emotionality and of activity among rats is largely inherited, a finding which seems logical in view of the relationship of emotionality and activity to the glandular balance of the organism—which also appears to be inherited Research [34] has also shown that the administration of male and female hormones to young boys will promote aggressiveness and submissiveness respectively and that glandular extracts can cause a hen to display the aggressiveness of a rooster and a male dog to display mothering behavior Common experience also suggests that the temperament (as a predisposing factor to social behavior) of Chihuahua and Boxer dogs tends to be different even in the case when the pups are isolated at birth from their parents and other dogs The same appears to hold for the differences in nervousness between Thoroughbreds and Shetlands In the same way, the drastic change in social behavior that takes place with the advent of puberty is, undoubtedly, based on something more fundamental than environmental pressures alone although, to be sure, the latter are also involved, particularly in determining such superficial problems as whether he courts her by taking her dancing or by serenading her, or whether he drags her into his cave or carries her across the threshold of the newly rented apartment It is also probably true that the differences in social behavior of men and women represent more than a cultural bias

Also suggestive of the role of heredity in determining social behavior is the fact that Dennis found twins to smile at the same age regardless of the stimulation they had previously received to induce them to smile Likewise, Shirley [335] found that shyness and self-consciousness develop with such regularity during the second year as to suggest an underlying maturational process [1] Furthermore, even in seemingly similar en-

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[1] This can probably best be explained on the basis of the maturation of the perceptual and mental powers of the child which makes possible discriminations that were previously impossible

vironments such as that of an orphanage, some infants laugh more often and generally seem more outgoing than others, a fact which may reflect relatively innate predispositions although subtle differences in the environment may also be involved Social behavior may be inherited in an indirect way the equipment which makes social behavior possible, such as physical structure, is largely innate and a person who has such physical assets as beauty, for example, is probably going to find social adjustment easier to attain than the person who is ugly, sickly, or puny

The role of learning and of environment in social development is certainly not to be minimized and Kilpatrick's *Selfhood and Civilization* [211], for instance, is oriented toward the thesis that personality is essentially a social product This position, although possibly overstated, is nevertheless a good one for teachers to consider in view of the fact that the school has accepted as one of its primary objectives the development by the child of socially adequate behavior Actually, this is not contradictory to the position taken in the preceding paragraph the problem is one of channeling into socially acceptable behavior whatever inherited predispositions one may have Thus, assuming a glandular basis for a high level of aggressiveness does not deny the role of education in the channeling of this aggression toward constructive behavior any more than accepting the glandular basis of heterosexual attraction implies that there is nothing we can do to help adolescents in developing sound boy-girl relations Behavior is governed not by the individual's needs but rather by his motives and these are learned one may be predisposed by inherited factors toward aggressiveness, therefore, and still learn to direct this aggressiveness into desirable activities It is also true, of course, that much of what constitutes socially acceptable behavior is merely a matter of complying with the customs and traditions of one's culture and this sort of social competence could not possibly be attained as a result of heredity, although the capacity and the tendency to conform might be

An interesting and unique aspect of social behavior is that it is cumulative the person who is socially adept finds himself in demand and has, therefore, many opportunities to improve his social skills further whereas the person who is lacking in social skills finds himself without opportunity to learn Furthermore, one's behavior affects that of others aggression leads to counter-aggression and to further aggression while on the contrary a smile encourages another also to smile which, in turn, gives the first person more cause to smile Thus, through such vicious or virtuous circles which social behavior is likely to generate, not only does environment affect one's behavior but also one's behavior influences his environment

EARLY SOCIAL DEVELOPMENT

The child's social development has already progressed a considerable distance before he enters school Of major importance in this early development is the role played by identification particularly with the parent of the child's own sex, for such identification provides him with the security he needs in order to explore his world and constitutes an important aspect of character formation[2] Later the child identifies with other persons, including older siblings, his teachers, and other acquaintances Gradually, he incorporates into his self-concept the values and the habits of the persons he accepts as his heroes Because of this, it is of tremendous importance that children be supplied with proper models with which they can find identification The debunking of our national leaders, past and present is often harmful in this connection as it leads to cynicism and to the search for other heroes, frequently less desirable, and the consequent glorification of unsound values

It follows from this discussion that people, including teachers, who put themselves in a position where they can be accepted as models by children must exemplify sound values and ideals of conduct The teacher's life after school, for instance, is rarely his to live as he pleases, for any scandalous or questionable behavior on his part will result in conflict or in a lowering of the moral standards of the children who have identified themselves with him Along a different line, there is also need for a variety of personality patterns among the teachers with whom the child comes into contact There is need on the faculty of a given school for the quiet and reserved scholar and the more rough-and-ready he-man, for the feminine and attractive woman teacher and the more aggressive career girl, as well as for the various stages in between so that the individual child can find among his teachers one or more whose personality pattern and value system fits in sufficiently well with the self-image which he has already formed that identification can take place The child also needs the opportunity to identify himself with social groups of high social and moral values and ideals such as the Boy Scouts so that he can be led through social pressures to develop a sound self-image which is essential to character formation

The nursery school serves an important function in promoting social adjustment Research [113, 250] has shown that children who have attended nursery school and kindergarten adjust more readily to first grade

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[2] Identification with the like-sex parent is easier for girls than for boys not only is there a greater degree of association of girls with their mother than boys with their father but there is also a greater similarity in their roles and even in such things as their voices

than children who have not had this experience and, whereas this advantage would tend to be temporary,[3] preschool attendance might be expected to have a beneficial effect on getting the child started on the right foot Kindergarten may be considered to have two major functions [a] it promotes social adjustment especially on the part of a few children who have been overprotected or whose home background has been rather unfortunate In such cases, the teacher can be more objective than the child's parents and, therefore, be much more effective in making him secure or in making undesirable behavior unprofitable, and [b] it promotes readiness toward schoolwork through creating favorable attitudes and through providing the opportunity for improvement in the tools of communication

However, the nursery school and the kindergarten are, at best, only a supplement rather than a substitute for the environment of the home, whether or not a given child should attend such school depends on his particular needs Essentially, it is a matter of whether the child would gain more from the socialization which the school and the other children could provide him than he would from the security and the various experiences to be found at home A secondary but not entirely illegitimate function of preschool is to free the mother from having the child underfoot all day so that, refreshed, she can be more effective in dealing with him when he comes back home On the other hand, one must be careful in sending an insecure child away from the security of his home it may not be wise, for example, to send the two-year old to nursery school so that mother will have more time with the newborn baby The selection of teachers for such schools is of particular importance, for unless they are especially understanding and adept at seeing that the rewards of attending school outweigh the losses the child has to suffer by leaving his home, more harm than good can come out of his attendance at these schools This is especially important in the case of the insecure child, and particularly so during the first few days when the pattern of dislike for school can easily be set

There is considerable research evidence of the consistency of one's basic social behavior patterns and, although there may be changes in the outward manifestations, the underlying tendencies and predispositions tend to remain constant over the years McKinnon [249], for instance, in his study of children over a six-year period found that children classified according to the following social behavior patterns [a] withdrawing,

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[3] There is probably a selective factor involved the parents who send their children to kindergarten (when this is a matter of choice) are perhaps those who are more conscious of their children's development •

[b] conforming, [c] invasive (i e, displaying aggressive tendencies), and [d] cautious (i e, interested but reluctant to enter into social contacts) tended to remain in the same classification despite attempts on the part of the experimenter to produce shifts This, of course, does not always hold true and a child may display relatively different behavior as he takes on different roles in different groups and a gifted child may, for instance, be an outcast in grade school only to blossom out as a leader in high school It is, however, likely in such cases that the radical changes involved have been largely in the area of outward behavior and that the individual is still relatively consistent in his inner predispositions

Of tremendous importance in social development is the part played by the sex drive and its effect on boy-girl relationships Although the preschool child makes no distinction between boys and girls, and the preadolescent avoids members of the opposite sex, heterosexual adjustment becomes one of the major developmental tasks of adolescence and the promotion of such adjustment certainly warrants high priority among the objectives of the high school Because girls as a group mature earlier than boys, they are likely to find each other uninteresting—a situation which obviously does not simplify the work of the junior high school in providing activities designed to promote boy-girl adjustment Furthermore, the fact that, as shown in the accompanying chart [204], there may be a span of some seven years in the age at which boys and girls reach puberty makes for rather severe problems of adjustment particularly in the case of late maturers Early maturers also find themselves out of touch with their age-mates until the latter catch up, but that gives them a head start and research [198] has shown them to be generally more poised, more socially competent, more popular and more likely to be student leaders than those who mature later

Also of great importance from the standpoint of one's social development is the effect of socioeconomic and cultural influences Obviously, the child is going to adjust his social behavior to the pattern and to the demands of the environment in which he lives and, because of the importance of experiences in the formative years in setting the pattern for later life, the teacher must, if he is to understand the child, consider the environment from which he comes He must realize that not only is different social behavior accepted—and indeed expected—in different socioeconomic and cultural groups but that many of the values which the school holds dear are in more or less direct conflict with those of the home and community environment of some children Thus, children from the lower classes are more likely to be involved in fighting and cheating

and to have different values with regard to the need for hard work and getting ahead than children from the middle class, a fact the teacher cannot afford to overlook if he is to be effective in guiding their growth
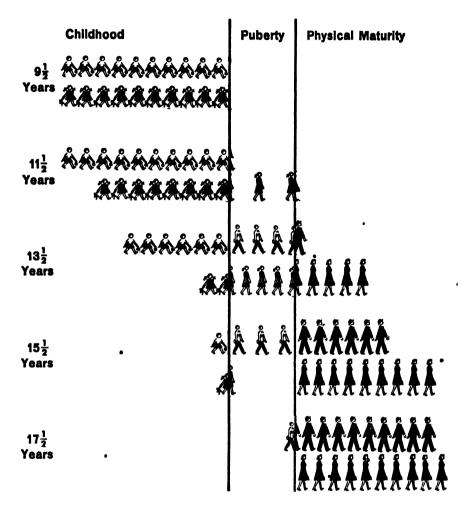
Fic 6 2 *Attainment of puberty in relation to age Each boy represents 10 percent of all boys of given age measured, each girl represents 10 percent of all girls of given age measured After Kelleher [204]*

In the same way, girls are more likely than boys to value conformity, social graces, and getting along with others At the same time, the teacher must not forget that there are wide variations within any one socioeconomic or cultural group and that each child has to be understood on his own basis

Friendship

Affection and belonging are among the psychological needs the individual must satisfy if he is to avoid emotional tension and personal maladjustment As we have noted previously, the average child obtains at least a minimum degree of satisfaction of these needs through his immediate family and the friends he can make but there are a number of children who have serious problems in this connection In fact, it is significant to note that the person who is most in need of making friends is generally the least capable of establishing any kind of friendship, for the more debarred a person is from this relationship, the more insecure and desperate and the less capable he becomes of devoting himself constructively to the task of making friends Furthermore, the picture gets worse as he is consistently denied practice in the art of give-and-take required to make friends An equally undesirable situation prevails when the individual has only one or two close friends (or even a small clique) who monopolize his friendship to the extent that he excludes all others and denies himself the opportunity of broadening his circle of contacts

The choice of friends often rests upon some rather obscure basis Research [187] has shown considerable resemblance to exist among friends in such characteristics as age, height, intelligence, interests, and socioeconomic, cultural, and religious background, but at times considerable differences in these traits are to be noted Geographic proximity (propinquity) is generally more important to young children in determining friendships than is social class with the latter becoming progressively more important in adolescence and adulthood But, whereas it is sometimes difficult for outsiders to understand what a certain person sees in another—as many parents of teen-age daughters can testify—one can be sure that each satisfies some basic need of the other or the friendship would not last

The choice of friends changes as interests, needs, and goals change Thus, the preadolescent chooses his friends on their ability to play ball or whatever sport is being played at the moment In the same way, the adolescent girl is interested in the playboy who has money and a car Or the boy may select the less popular girls as he learns his way about and then become attracted to the more popular ones Generally, friendships tend to become increasingly stable with age, but occasionally childhood friendships are tremendously enduring Attempts to break up friend-

ships must be carried out with tact, for too strenuous objections force the individual to defend his choice against the seeming threat to security and independence This reaction is particularly true in America where championing the underdog is a virtue and ideal Thus, the subtle approach of having a girl bring her unwanted boy friend into her home where he will be projected against a background of the values the home has always treasured is more likely to cause her to see his inadequacies and result in a break in the friendship than is a more open attack

Popularity is generally based on a number of considerations which vary from age to age and from group to group Thus, among preadolescent boys, physical size and strength are often the most important aspects of popular children, particularly in groups where fighting or sports are important whereas, in high school, wealth and social status assume greater importance It might be pointed out in passing that popularity does not necessarily represent good adjustment it all depends on the nature of the group in which one is popular To be popular, a person usually needs to have a somewhat greater degree of the characteristics the group treasures, such as a pretty face or social prestige—and, again, it would appear that these stars help others satisfy certain needs or they would lose their drawing power People will sometimes, for example, seek their friendship as a means of getting into the gang or of building up their own ego Also to be noted is the fact that popularity tends to be cumulative a person already in demand learns how to deal with people and thus ensures his continued popularity

Sympathy

An important aspect of social intelligence particularly among adolescents and adults is the ability to sympathize with others, to show sensitivity to their needs, their joys and sorrows, their fears, and their sufferings Sympathy is a sign of social maturity children, as a rule, are so ego-centered, they have sympathy for no one but themselves There are also many adults who are incapable of feeling genuine sympathy over the misfortunes of others Some people have such deep-seated needs of their own that they cannot afford to consider the needs of others they visit a friend in the hospital not to express sympathy over his illness but to tell him of similar or worse experiences which they had, apparently expecting him to sympathize with them Some are incapable of appreciating other's feelings because of conflicting impulses the person who

sees a need to protect himself against a feeling of guilt arising out of partial responsibility for another's predicament may be unable to sympathize with the sufferer It may also be impossible for certain people to feel real sympathy when misfortunes befall an enemy the conflict arising out of the teacher's need for revenge, for example, may make it difficult for him to be sympathetic to the child whose unfortunate home situation leads him to be defiant Some individuals seem to enjoy the prestige of their misfortunes and may actually resent the competition of similar misfortunes occurring to others

Probably the best way to promote sympathy on the part of the child is indirectly through providing him with a sense of security, for only when a person is secure can he forget about himself long enough to think of others It is generally agreed, for example, that secure children are more likely to develop kindness and consideration for others while insecure children are more likely to develop jealousy, rebellion, resentment, and hostility Beyond that, adult example together with incidental discussions of the effect of one's behavior upon the feelings of others is probably all that can be done In addition, it must be recognized that, in order to be truly sympathetic, a person must have experienced misfortunes sufficiently like those of the person with whom he is supposed to sympathize so that he can identify with the sufferer

Resistant and Aggressive Behavior

The individual's desire to maintain his individuality leads him to give in only very reluctantly to pressures designed to socialize him Hence, even very early in life, the child begins to show signs of negativism This resistance generally represents nothing more than an attempt on his part to assert his independence and to test his social powers, or perhaps to avoid being pushed into situations which he cannot handle and, thereby, to save himself the possible indignities of failure The severity of a given child's negativism probably depends, in large degree, on the way adults handle him if they don't push him and if they allow him to fail without making a fuss over it, his natural desire to grow will tend to keep negativism at a minimum

The child's negativism reaches a peak around age three or four after which time it tends to decline as he not only finds that it pays to comply but also develops greater capacity for complying and for understanding what is expected of him It is also true that as the child grows older

he develops new capacities for asserting himself in positive ways, e g , sports, so that he no longer needs to rely on negative resistance It may also be that adults are more considerate of him as he grows older Nevertheless, negativism continues throughout life the adult simply has more subtle ways of expressing his independence

Aggression is a more extreme kind of resistance in that it includes some form of attack, which generally stems from the child's desire to assert himself or to explore his ability to handle others but also from a desire to revenge himself for something or other, often the accumulation of petty annoyances

The greater the number of contacts between two persons, the greater the likelihood of the occurrence of aggressive or resistant behavior Thus, sibling quarrels, even though they may continue after the child has learned more subtle ways of dealing with strangers, are not a sign of incompatibility Research has shown that the children who make the greatest number of friendly or neutral contacts also make the greatest number of contacts of a resistant or belligerent nature However, even at the peak of negativism, the number of resistant and aggressive contacts constitute only a small fraction of the total number of contacts made [259]. Thus, it may be said that resistant and aggressive behavior is a relatively normal phenomenon, or at least, as stated by Green [154], quarrelling is part of friendly social intercourse at all ages Although it may not be desirable, except perhaps in the case when the child for the first time begins to stick up for his rights, even aggression tends to represent a developmental stage through which the child must pass on his way to more mature ways of asserting himself Jersild and Markev [195] found that children whose kindergarten teachers prevented them from fighting fought more the next year than did those whose kindergarten teachers interfered less frequently They suggest that fighting is an integral part of the process of learning how to deal with others Even among adults, it may be that the individual's need to attain his purposes and to look after his interests is bound to involve him in occasional conflict with others who are trying to do likewise

It is probably safe to say that direct aggression is not desirable and that some attempt should be made to channel this aggression into such constructive activities as classwork and sports Competition involved in a game of football, for example, is certainly more effective in removing group tension than are petty bickering and scapegoating On the other hand, if overdone, competition is likely to create resentment and bitter feeling between the contestants to the point where it serves to promote rather than to dissipate aggressive feelings

Leadership

In view of the importance of leadership in a democratic society, the school needs to pay particular attention to the development of leaders The problem is one that has received considerable attention, particularly on the part of sociologists, and extensive research has been done on the subject Since space limitations permit but a brief overview of this research, the student interested in the subject should consult Stogdill's excellent summary [370] and other sources for a more complete treatment

Because of the wide range of differences both in a given ability from person to person and from ability to ability in a given individual, practically everyone has some interest and some ability which makes him a potential leader in some field The school's job is to provide the encouragement and the opportunity for this potential to develop and to sell children on their responsibility for assuming the leadership of which they are capable   •

That leadership can be cultivated has been shown by such studies as that of Eichler [109] who was able to increase the leadership of junior-high-school students through a program of instruction and actual practice Generally the more flexible and more varied the school program, the easier it is for members to assume leadership with regard to some phase of the group's purposes and goals It is also important to note that, unless there is considerable turn-over in membership, it is relatively difficult for a person to climb within a group which is already established, for his fellow members are likely to continue to think of him in his old role of follower The organization of new clubs and the movement of the old leaders elsewhere as they graduate from grade school to junior high, to senior high, to college, and to an occupation gives newer members a chance to assume leadership, although even then it is generally wise to limit the number of leadership positions which a given individual can fill   •

In addition to good leaders, a democracy needs intelligent and informed citizens, i e, followers who have the ability to evaluate leaders, the willingness to insist on knowing what, whom, and why, and the integrity to refuse to go along with the pack unless convinced that whatever is being decided is for the general good Actually, what is important is not that people lead or follow but rather that they cooperate, with each member making the contribution of which he is capable The school

cannot assume that allowing students freedom in the management of
various clubs and organizations will automatically provide training in
sound democratic living, for student organizations with little or no faculty
supervision may easily exemplify anything but democracy In the same
way, the fact that a leader has been elected by a majority does not
necessarily mean that the group will be provided with good leadership,
for it occurs far too often that a small clique maintains itself in office
while the majority get progressively less interested in what is going on
and in doing anything about it

A number of studies have been conducted on the characteristics of
leaders at various age levels Most of these agree that leaders are gen-
erally somewhat superior in such areas as intelligence, scholarship, social
participation, sociability, initiative, originality, enthusiasm, self-confi-
dence, popularity, adaptability, and even in physique and appearance
They must not be so superior as to be different and consequently unable
to communicate with the group Research has shown [60] that leaders
are sensitive to the needs of the group and that they are not only fluent
in putting into words the ideas which the group.has but also capable of
putting into dynamic action what the group holds as vague goals A good
leader very often does nothing more than spread enthusiasm and put
into a neat package the feelings and desires which the group already
has—or to quote Guthrie and Powers [160] "He maintains his position
by watching which way the group is about to go and putting himself in
front just before it starts moving" Any group that needs a leader will
develop one in keeping with its needs and will keep him as long as he
serves group purposes Hence, the permanence of a leader depends on
such things as the nature of the group and its purposes in relation to the
qualifications of the leader and his ability to adapt to the changing pur-
poses of the group

Discipline as an Aspect of Social Growth

Of the many problems facing teachers—especially beginning teachers
—none can be any more immediate and drastic than those concerning
the maintenance of discipline in the classroom Studies [116] generally
rate discipline as one of the major problems faced by new teachers, for
even though a beginning teacher can make a stab at teaching a given
lesson, it sometimes becomes quite a problem to "settle down' some thirty-

five youngsters who are all at once bent on talking, moving around, and generally doing everything but what they are asked to do In such times, the young teacher tries to recall the specific rules, the magic formula, to be used for such a situation Finding none—only a few general principles, none of which seems to take care of things—he decides that this new-fangled psychology is for the birds and, in short order, returns to the autocratic control prevalent years ago and, unfortunately, still common in some of our schools Then he tries to rationalize that students are rowdies, that a teacher must be realistic At other times, he will recall his psychology and will alternate between democratic and autocratic classroom management, much to the confusion of all

Sheviakov and Redl [334] emphasize the fact that the administration of constructive discipline is a much more exacting task than is reliance on simple punitive tricks Unfortunately, many teachers overburdened with large classes have only time to grasp at autocratic measures as simple expedients "for the time being"—but they never get to the more constructive measures It is conceivable that the old schoolmaster with his scale of so many lashes for each offense was not particularly bothered by breaches of discipline and there are teachers even today who feel that the whippings of yesteryear might not be such a bad idea—the fact that even prisons have put away the lash as a means of handling offenders, to the contrary notwithstanding!

But research has shown [237] that too frequently children become apathetic when faced with repressive classroom control, they comply but they do only what is necessary to avoid punishment Eventually, some who can stand it no more drop out of school The remainder behave but what has been brought about is a change in surface behavior only and not in basic attitudes as would be necessary if good behavior is to be made self-sustaining Some changes have actually taken place in basic attitudes but these changes have been essentially for the worse dislike for school, dislike for the teacher, a belief that might makes right, to name but a few

If the child is to be expected to take his place in a democratic society, he must have practice in living in a democratic atmosphere while undergoing his internship prior-to becoming an adult member of that society This implies that he must be given the freedom to make decisions—and occasionally mistakes—in order to grow progressively more capable of governing himself Autocratic classroom management is based on the opposite tenet of conformity and obedience for their own sakes The two viewpoints are diametrically opposed and cannot coexist self-discipline cannot develop in an atmosphere of autocratic control

NEED FOR DISCIPLINE

In view of the confusion as to its meaning, it may be well to define the word *discipline* before we discuss its various ramifications Discipline may be construed in any one of three ways [a] discipline in the sense of punishment as in the statement "I had to discipline him", [b] discipline in the sense of enforcement of obedience and orderly conduct through such methods as the teacher may think necessary, implied in the remark "He is a good disciplinarian", or [c] discipline in the sense of orderliness through self-control and self-direction It is in the sense of the last defini- tion that the term will be used in this text In this sense discipline is equivalent to planning, e g , "Let's drive on the right side of the road" or "Let's not do this " As such it is a matter of public convenience and it becomes a necessity in that it saves the effort and confusion that would result if everyone had to make individual decisions on every occasion that presented itself And it is only because at times the child does not see this necessity that discipline in the sense of rules must exist and he will have to accept rules which, because he cannot grasp their full significance, will seem to him arbitrary and coercive

Used in this sense, discipline is necessary everywhere—on the street, in the home, in the classroom, and on the playground—for rules and their enforcement are necessary parts of efficient living as would be ob- vious to anyone stopping to consider what would happen if all rules were to be suspended Such discipline is constructive and spells the difference between an army and a mob As opposed to this, much of the discipline commonly found in our schools does nothing more than deter the child from misbehavior without helping him toward desirable attitudes and behavior In fact, sad to say, too often discipline is just plain vindictive or retributive

One of the major troubles involved in the development in the child of favorable attitudes toward rules and regulations is that so many of the rules he is to obey do not make sense to him in terms of the concept of orderliness expressed above Thus, in the average classroom, as well as in the home and community, the child frequently finds himself face to face with rules not clear to him and, judging from the fact that they are often not enforced, he gets the idea that laws are something to be violated or something that adults put together for the sole purpose of catching children off base when they choose to do so

Generally it is difficult to set down a set of regulations that apply in all cases thus, the rule of quiet in the classroom is, on the whole, sound, yet it may actually interfere with efficient operation when the class

is working on certain projects Rules are not good or bad except in terms of the purposes to be achieved at a particular time and in terms of the stage of development of persons involved This only points to the need for a democratic viewpoint of discipline as individual self-control based on an understanding of the purpose of rules and regulations Since one could never set down rules that would apply to all the specific situations the child is likely to encounter, good behavior, in the final analysis, rests upon developing his good sense and cultivating attitudes that will lead him to do what is right in the situation as he sees it When this is coordinated with practice in self-direction under the guidance of an understanding teacher, effective behavior patterns are likely to result

ORIGIN OF MISBEHAVIOR

Since all behavior—including misbehavior—is an attempt at satisfying needs, the child who misbehaves has apparently learned from past experience to gratify his needs through misbehavior and is, therefore, in need of help in finding more suitable outlets for the satisfaction of these needs He may have found that he could gain status among his peers by annoying the teacher Or it may be that he has learned that continuing in his misbehavior and taking the expected punishment is less anxiety-producing than is trying something new Thus, misbehavior can be explained on the basis of the same psychological principles as acceptable behavior and only when we, as teachers, approach it from this point of view can we be successful in dealing with it

Under circumstances that are pleasant and productive, the child is likely to find adequate outlets for satisfying his needs within the framework of the socially-acceptable aspects of the situation Contrariwise, such aspects of the classroom as unsuitable curriculum and a tense emotional atmosphere arising out of pupil-teacher or pupil-pupil ·dissention or excessive intragroup ·rivalry and hostility tend to promote unrest and misbehavior It is probably true, for instance, that a good part of the discipline problems encountered in our schools stem from a curriculum that is too easy or too hard, or that is unrelated to the goals and purposes of the child so that, far from being a source of satisfaction for his needs, it makes for frustration and tension—and misbehavior

The old type of discipline was based on a philosophy of suppressing misbehavior—which it did—but it also increased the tension that caused it in the first place Furthermore, it did little or nothing to show the child proper behavior Unfortunately, even today, despite a good deal of emphasis on the principles of mental hygiene, much of the discipline in our classrooms has a strong police-like flavor of repression and punishment.

Modern discipline, on the other hand, is based on the philosophy of helping the child learn to satisfy his basic needs in socially-acceptable ways through providing him with guidance in finding suitable outlets and with practice in acceptable behavior Providing such guidance and such practice is considered by modern teachers as much the responsibility of the school as is providing guidance and practice in the academic aspects of the curriculum they are both oriented toward the attainment of the same purposes for which the school exists

It is particularly important that the teacher provide a classroom environment which is conducive to the learning of effective behavior This implies that the child must first be made secure (for the insecure child is not free to change his ways) and that the classroom atmosphere be sufficiently permissive and accepting that he can afford to experiment in better ways of behavior without fear of losing status and group acceptance Under such conditions, he can afford to admit "I goofed," and profit from his mistakes rather than have to defend himself and, thus, shut himself off from any opportunity to learn If the teacher is sensitive and alert to the needs of his pupils and helps them work constructively toward their satisfaction, their need for misbehaving will be largely eliminated

DEALING WITH MISBEHAVIOR

The school's task in connection with discipline is not so much a curbing of misbehavior as it is of promoting constructive and positive behavior Yet, as every teacher can testify, instances of misbehavior with which the teacher must deal are bound to occur and he needs to be prepared for such situations However, it is even more important that he realize that misbehavior is only an indication that the child is having difficulty in satisfying his needs through acceptable channels, and that the constructive way of dealing with misbehavior is to help him find suitable outlets Unfortunately, many teachers are so busy dealing with the symptoms that they never get at the underlying causes, which they must do if they are to be effective from a long-term point of view The sooner teachers come to view misbehavior from the standpoint of individual development rather than as a violation of classroom decorum, the more successful they are going to be

The misbehaving child is simply one who has not yet found socially acceptable solutions to some of his major problems He is not a born trouble maker nor is he even trying to be wicked In fact, just like all other children, he is trying to satisfy his needs but he is not going about it in the right way And before we blame him for this failure, let us

remember that he may not be one of these hypothetical average students for whom the curriculum is supposedly devised, he may be faced with a particularly trying home situation, or some other equally difficult problem Faced with unrealistic demands and inability to run away from the situation—and often not understanding what any of it is about—he may be desperately trying to tell us that something is wrong "Getting after" such a student, as Woodruff [424] points out, merely aggravates the situation without removing any of its undesirable or frustrating elements Thus, it seems illogical to punish the child who cheats when cheating constitutes his only way of meeting requirements and maintaining his status among his peers Children don't cheat in every class they do so when demands are too high and there is too much emphasis on grades [4] Cheating may also occur because the material is unrelated to their needs and purposes and the only reason they might consider learning it would be to pass the examination and to comply with the teacher's request [5] They may also cheat because pupil-teacher relations are strained or simply as an expression of hostility or as a way of accepting the challenge of the teacher Or, perhaps, they cheat in self-defense when other children cheat or when the teacher has favorites Dealing with such situations can be difficult and no royal road is to be found helping children individually and collectively to incorporate into their self-concept the ideal of honesty may help as may reliance on the honor system but, when cheating occurs as a result of unsatisfied needs, anything other than dealing with the basic cause will be relatively ineffective

The teacher's approach to misbehavior must be positive he must first convince himself that the child's misbehavior stems from a need and that a diagnostic approach, while taking a little longer, generally accomplishes a great deal more than repressive and punitive measures The teacher also should realize that the child who is in greatest need for his understanding and acceptance may be the very child who, on the surface, seems to deserve it least When dealing with the child who misbehaves, the teacher needs to build him up, to show him that he is accepted—regardless of his misbehavior—and that he has confidence in his ability to grow Berating, scolding, and generally listing the child's shortcomings in a moralizing tone only serve to foster his development

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[4] Correlations from − 18 to − 44 between IQ and the incidence of cheating found by Jordan [200] may support the view that children cheat out of necessity but, on the other hand, they may arise simply out of the positive correlation between IQ, socioeconomic status, and honesty and other values related to academic achievement

[5] The teacher would not perpetually do meaningless things "simply because the principal asked him to "

of a criminal self-image with resulting damage from the standpoint of future growth potentialities As far as improving behavior, such an approach is not likely to be effective. to the extent that the teacher's attack constitutes a threat in terms of his present self-concept, he has to defend himself and to close the teacher off as a potential helper The need is for a permissive atmosphere in which the child can gradually incorporate into his self-image desirable values and ideals of conduct without threat to status and, since the habit motive is an important aspect of the self-image, he needs practice till desirable self-directed behavior becomes stabilized

There is also the problem of helping him find new ways of fulfilling his needs This may call for a certain amount of diagnostic work on the part of the teacher as well as trial and error (in a permissive situation) on the part of the child Questions such as "What need is he trying to satisfy through his misbehavior? How could he do the same thing in a better way?" are in order This may be long and tedious but there is no short cut It is the unwise teacher who tries to operate in defiance of the principles of behavior the wise teacher uses these principles as the basis for a constructive approach to his problems He realizes that such misbehavior as inattention is more likely to occur when children are ' tired (and some children are lacking in energy, perhaps because they use it in other activities) or are preoccupied with some pressing need, that they have so much energy that being noisy and mischievous is almost natural, that some children would like to cooperate but can't because cooperation with the teacher would involve rejection by the group, and that they sometimes find the gamble involved in misbehaving interesting —in fact, it may be the only relief they have from the monotony of an unsuitable curriculum An understanding of these principles is fundamental for dealing constructively with misbehavior, each case is different and, in some cases, the treatment will be difficult and complicated— but, at least, the approach is constructive and it is likely to be more effective in the long run

While it is untrue that a good teacher never has discipline problems it is certainly a fact that such problems are multiplied where an unsuitable curriculum, poor teaching methods, and a disliked teacher are involved Experience has shown that one of the satisfactory ways of promoting effective discipline is keeping children occupied with meaningful classroom activities, for a well-motivated child who sees a definite purpose in what he is doing in terms of his goals and his motives does not have to look elsewhere for outlets for the satisfaction of his needs The child who finds school interesting is not a truant any more

than the boy who enjoys baseball violates its rules. Thus, motivation and discipline are interrelated to the point that only when motivation for schoolwork fails does discipline become a problem Failure in discipline represents failure in the direction of the child's motivation What the teacher needs to do is to provide a suitable curriculum and, through sound pedagogical procedures, induce him to partake of the school experiences with interest and enthusiasm It is also desirable to adopt a businesslike approach to classroom management Starting promptly, making clear what is expected, expecting only mature behavior, and not letting the class bog down are important certainly we cannot expect children to be quiet and attentive when nothing happens When the teacher has done all he can along those lines, he need not worry about misbehavior becoming a serious problem

It might also be pointed out that teachers sometimes expect too much too soon in the line of improved behavior After all, progress toward self-control is a gradual process and, particularly if previous autocratic control has deprived the child of practice in adequate social behavior, it is necessary to start where he is, giving him only the freedom he can handle The child must proceed from adult control to group control to self control and some children have not reached the maturity necessary to take one or the other of these steps Consequently, the teacher needs to accept the fact that he is not going to be completely successful with all children the important thing is that they progress toward the ultimate goal, self-direction

Too much guidance is bad in that it deprives the child of the opportunity to learn A laissez-faire approach, on the other hand, is equally bad for, while self-direction is the goal, the development of this control and the integrating of the ideals and habits upon which it is based require the guidance and, at times, the firm hand of the adult The child needs to know specifically what are the limits to which he can go for, although he will continually struggle against them, he needs these limits to provide security When the limits are nonexistent or movable, not only is he prevented from learning self-discipline but he is left anxious and bewildered as to where he stands He needs to be provided with a clear-cut definition of the situation and of what is expected of him conduct-wise Furthermore, he needs to explore the reality of these boundaries without risking having to forfeit status and group acceptance Actually, most children, at one time or other, experiment with asocial behavior but give it up when they find it brings about social disapproval In the meantime, they have learned self-direction, which they could not

have done had the atmosphere been so repressive that they could not have taken a chance

If discipline is to be cumulative in the sense that the child can profit from his previous attempts at self-direction, it is necessary that it be consistent, but it is equally important that this consistency be in terms of the spirit rather than the letter of the law, in terms of what is moral rather than what is legal Thus, the child must be encouraged to understand the purpose for which the regulation was set up and to appreciate the fact that the regulation has no point apart from its purpose Thus, if he can see that in a given case the purpose of the law can better be served by behavior other than that called for by the regulation, he should be encouraged to act accordingly In fact, as a future citizen of a democracy, he should be alert to the need to amend or rescind rules which no longer serve a useful purpose

It has long been an established tenet of democracy that people should have a voice in the policies that affect them directly, and children should, therefore, have practice in planning and enforcing progressively more of the rules and regulations that deal with school behavior The making of rules should be a cooperative venture on the part of teacher and pupils This serves to remove discipline from a pupil-*versus*-teacher basis for, when each individual becomes responsible for his own behavior, disobedience of rules becomes a violation of the rights of one's fellow-students and would-be offenders are deprived of the opportunity of attaining status in the group by disobeying the teacher When discipline is a matter of self-imposed restrictions based on an understanding of group as well as individual needs and of the consequence of violations of these restrictions, misbehavior will be relatively rare Under such conditions, the teacher will generally have to attend only to major infractions while leaving the group to get individual children in line in minor violations Student courts are often very useful in forcing conformity on the part of students while, at the same time, providing an important lesson in self-direction on a group basis They do, however, need faculty supervision not only in order to provide the maximum learning experience but also to prevent unduly harsh and unfair punishments being handed out, especially in the case of the offender who is in greater need of understanding than of punishment

A number of suggestions for maintaining classroom discipline could be made Their effectiveness would be proportional to the extent of their agreement with the principles of psychology which underlie behavior, and the reader is once again encouraged to relate such suggestions

to basic principles rather than to accept rules of thumb of obscure or dubious validity For instance, in view of the fundamental importance of the self-concept in determining behavior, it is essential that the teacher convince the class that he expects mature conduct and that he believes they are capable of doing what is right Many teachers, unfortunately, treat the child as immature and undependable and then wonder why they find immature behavior It is also true that many children perceive the classroom as a place where pupils stage a perpetual battle with the teacher or where students waste time between more pleasant episodes of sports and play Until such time as they change their phenomenal field to construe the classroom as a place where one works toward worthwhile goals under the guidance of an understanding teacher, little gain can be expected to result from superficial attempts at discipline

Among the many other suggestions that might be made, consideration should be given to the following

1 Provide students with a constructive program of challenging educative experiences geared to their motives and goals When children become mischievous, explosive, rebellious, or apathetic, the teacher had better check into the appropriateness of the work assigned and the demands made of them It follows that teachers would save themselves a good deal of the time and energy they spend dealing with misbehavior if they but used this time and energy, along with a little ingenuity, in the direction of good teaching

2 It is better to use tact and to suggest than it is to order Ordering a person to do a given thing debases him and tends to create resentment and to put him on the defensive as a means of protecting his ego

3 Give a child advance notice when you want him to do something No one likes to be disturbed in the middle of some interesting activity, especially when such demands tend to cast him in the role of a slave who has to jump at the snap of a finger Furthermore, children are more likely to develop consideration for others if they see that others are reasonable and considerate of them

4 Do not threaten children with not loving them The teacher's acceptance of his pupils. should not be made conditional upon their good behavior, for, to the extent that he rejects them, they must, in turn, reject him and all he stands for in order to maintain a consistent self-image When the child feels that because he has misbehaved he no longer belongs, he has no alternative but to continue misbehaving Furthermore, this puts discipline on a personal basis which it should not be if it is to be effective in promoting self direction

PUNISHMENT

The question of punishment must invariably come up in any discussion of discipline, for, although the emphasis should be on the positive and ideally there should be no need for punishment, in practice teachers will occasionally have to punish children and will be fully justified in doing so as a means of helping them toward self-discipline This is particularly true since there is a limit to which the teacher can allow misbehavior on the part of one child to disrupt and disturb the other children in the class However, punishment is essentially negative since it is directed at the suppression of misbehavior and only secondarily at the promotion of adequate behavior There are, of course, times when all that is wanted is the suppression of certain behavior but, since the goal is eventual self-direction, punishment must generally be accompanied by constructive guidance in what to do (along with what not to do) Thus, it may be all right to slap the hand of the young child who approaches the stove but it is generally not enough to punish the child who bullies he must be helped into more adequate ways of social relations

Punishment can be of many kinds, none of which is necessarily any better than another except as it applies more appropriately to the individual case and can be integrated more easily with some constructive measure Thus, punishment through the natural consequences of the act is often said to be best in that it is more impersonal and, therefore, less likely to create resentment against the dispenser, but very often it is too long delayed to be effective and possibly too severe To have the child drown as a consequence of his failure to heed his mother's command not to go near the canal, for example, would be objectionably effective

The following are among the more common forms of punishment used in the classroom

[a] Nagging, scolding, ridicule, sarcasm, and embarrassment may bring quiet and order to the classroom, but are definitely to be avoided for they violate the basic rule relative to discipline, namely, that it never be allowed to destroy the child's relationship with parent or teacher They only serve to debase the child and create resentment Furthermore, they are essentially ineffective in changing the basic attitudes upon which a change in behavior is predicated for they force the child to close himself off against such an attack and to place the teacher's ravings into a framework of the ridiculous, the vindictive, or the psychotic And since such punishment is often given in anger, the child, who is looking for some justification, is likely to feel that he was punished not because he was wrong but because the teacher was angry

[b] Deprivation of privileges, especially when related to the offense, is generally a reasonably satisfactory form of punishment it is usually a fair deterrent to misbehavior and, when its relation to the offense is made clear to the child, it is not likely to create resentment On the other hand, it may involve a deprivation of the opportunity of learning more effective behavior Thus, keeping the child who fights off the playground while other children are playing may prevent him from fighting and he may accept it as fair punishment, but it is not showing him how to get along with others

[c] Detention is used by some teachers as the standard punishment for all offenses from inattention and lateness to insolence and defiance As such it has the flavor of the old country doctor having but one kind of pill for all sicknesses and, to the extent that is often not closely connected with the offense for which it is given, it frequently creates more resentment than learning The matter of what the child is expected to do during detention is also important in that the common practice of assigning schoolwork to be done during detention will, through the process of conditioning, lead to a dislike for the schoolwork involved For the same reason, the assignment of extra duties, whether of the schoolwork or the housekeeping variety, is generally not advisable But having him do nothing only adds to the time the child has for building for himself a convincing argument that he is being picked on, that the fault is not his, that the teacher has allowed others to get away with similar offenses

[d] Reporting the child to the principal, the dean, or his parents often leads the teacher to lose status in the eyes of his class children tend to have a strong sense of loyalty and are likely to interpret such reporting as tattling They are likely to lose respect for a teacher who cannot handle his own problems without having to call in outside help Furthermore, being reported to the dean or principal, whose very position is associated with fear on the child's part, is likely to cause him to be so highly defensive that, even though it may curb misbehavior, such a procedure is shortsighted since it is not likely to instill in him the positive attitudes needed to promote effective behavior Reporting would, of course, be justified if the teacher was doing it in an attempt to enlist the cooperation of others and the child was convinced of his sincerity

[e] Corporal punishment should be used only as a last resort, if at all Not only does the law restrict teachers in this respect but rarely does corporal punishment appear advisable On the other hand, the writer does not go along with those who condemn corporal punishment but who use pouting, appearing hurt and other psychological punishments which

can be far more devastating to the child than is corporal punishment which, once given, is frequently forgotten

Other forms of punishment could be discussed but suffice it to say that they all have limitations This is especially true inasmuch as occasionally, despite the protests of the victim, some child will be punished unfairly Teachers should, of course, exercise all possible caution to prevent this from happening and should be very careful to give the student the benefit of any doubt, but really the only insurance a teacher can take out against such an eventuality is for him, beforehand, to convince his class of his good will and his fairness When students like a teacher and are convinced that he has their welfare at heart, they can understand an honest mistake without being harmed by it

In the final analysis, discipline is an individual matter and the method of discipline as well as the disciplinary measure must fit the child rather than the offense Each case has to be analyzed on its own merits in the light of whether or not it helps the child's growth toward self-control and self-discipline

FAILURE IN DISCIPLINE

A certain degree of misbehavior in the classroom can be expected for as long as there are children there will be problem behavior and there is a limit to the extent to which the school can, in a short school day, promote mature behavior on the part of its students Nevertheless, when we find there is perpetual misbehavior on the part of a sizable number of students, something must be wrong either in the curriculum and the demands it makes upon them or in the way these students are handled In either case, part of the blame has to fall on the shoulders of the teacher, for it is he who deals with the child and adapting the curriculum and the teaching methods to his specific needs in order to promote his maximum growth is part of the job of teaching

That certain teachers fail in discipline in the sense of encountering an undue amount of misbehavior on the part of their students is a well-known fact Not so fully realized however, is that a much larger number of teachers fail in discipline in the sense of using autocratic measures in order to forestall misbehavior and of, thereby, denying their students the opportunity of learning effective self-discipline And, of course, if we emphasize the positive aspects of discipline—for it should be as much a part of discipline to inspire children to do their best as it is to discourage misbehavior—then probably every teacher is somewhat of a failure The reasons why teachers fail in discipline are nearly as varied

as there are combinations of pupils and teachers For the sake of dis-
cussion, however, they are grouped here as follows

[a] Lack of understanding of children and the dynamics underlying
their behavior Teachers are often unaware of the characteristics of
children, of their needs, and the means whereby these needs can be
satisfied This very often leads to the choice of an unsuitable curriculum,
the setting of unrealistic goals, and the enforcement of impossible de-
mands through autocratic classroom management Under such condi-
tions, it is no wonder that children compromise by doing poor work, by
misbehaving, or both

[b] Lack of a constructive program As implied in the previous para-
graph, a common failing among teachers lies in their not having a pro-
gram which is challenging to students Two errors can be made in this
connection [1] Some teachers don't have a program at all so that the
first and last ten minutes of each period are wasted and even those who
want to work cannot do so because of the interference of others [2]
Others have a program often very meticulously planned but not related
to the purposes of the students In either case, rather than receiving satis-
faction for their basic needs, the students get nothing but frustration
from the classwork and, consequently, resort to misbehavior

[c] Lack of understanding the purpose of discipline Discipline is
not a matter of keeping children subdued so they can learn but rather
one of leadership toward maximum growth on their part Yet, many
teachers still judge discipline in terms of classroom orderliness rather
than pupil growth and, as a result, glorify the docile child who may
actually be far from being well-disciplined Some teachers conceive dis-
cipline as a matter of suppressing anything which they, for whatever
reason, don't like rather than one of providing children with the op-
portunity to grow in self-direction They insist on conformity to rigid
rules, such as absolute silence and quiet—which is presumably for their
own benefit and comfort, since it has never been shown that pupil growth
is promoted by such orderliness And, of course, they are fully convinced
that adults are always right and children are always wrong it may
never have occurred to them to appreciate the democratic faith in the
individual and the belief in his inherent dignity and rights Children
need to learn to conform but, as stated by Lindgren [239], any program
that places the comfort, convenience, and needs of adults above the
needs of children is likely to produce misbehavior Furthermore, over-
emphasis on conformity destroys individuality and spontaniety and en-
courages apathy and discouragement

[d] Poor personality or incompetence on the part of the teacher In

the final analysis, discipline—just as any other aspect of the school's program as it relates to the child—revolves around the teacher As group leader, he exerts an influence of fundamental importance upon pupils both individually and collectively, and as a result, any quirk of personality or incompetence on his part is likely to have repercussions in terms of student behavior It is a common observation in high school, for example, to have children as they move from one classroom to another become transformed from purposeful scholars to little devils and back again Many teachers are insecure, perfectionistic, lacking in a sense of humor, and generally afraid to let go They insist on unrealistic standards —because their rigidity makes it impossible for them to think of better ones—and take as a personal affront the child's failure to meet their demands They meet aggression with super-aggression and leave him, not with a greater appreciation of the teacher's sense of fairness, kindness, and understanding, but with increased resentment and hostility These are the teachers who insist on promptness on the part of students but who are themselves often late and unprepared In short, they have not yet learned the concept of self-discipline which they are expected to instill in children Some are probably compensating for not being angels when they were children and apparently resenting the fact that, as pointed out by Lindgren [239], the trouble with the younger generation is that they are growing up to be no better than their parents—and one might add, or their teachers Others have learned, not an effective self-discipline but a neurotic rigidity and conformity to rules for rules' sake and cannot tolerate even intelligent deviations from the rule of the book [6] What schools need are teachers with integrity who can promote feelings of mutual respect, trust and understanding for unless children are convinced that they can depend on their teacher, they will find it difficult to profit from classroom discipline The big job is, of course, locating prospective teachers who can work with children and providing them with the skills whereby they can be most effective in helping youngsters grow in self-direction

Social Maturity

Social maturity is, of course, a relative term in the sense that it is not restricted to one single pattern and that, even within a given cultural

[6] The classic example of such inflexibility is the policeman, Javet, in Victor Hugo's *Les Miserables*

setting, there is need to allow for considerable variation within the framework of healthy social adjustment However, even though allowances have to be made for the individuality of the child, his assets and his goals as well as for the situation in which he finds himself, we might define some of the aspects of social maturity

Social maturity is essentially a matter of effective relations between the individual and the group and it involves the two-fold aspect of integrating one's goals and purposes with those of society in matters where the common good is concerned and of making whatever contributions to social welfare the individual is capable of making Thus, among other things [a] The socially mature person has attained relative freedom from domination by his parents and peers and no longer seeks security in childish dependence upon others nor does he display adolescent rebellion and explosiveness [b] He not only assumes responsibility for himself and his actions but he accepts responsibility for others [c] He has achieved social sensitivity to the point that he can integrate his needs and actions with the needs and rights of others and is able to communicate effectively in promoting harmony and effective action in social situations [d] He is able to meet various situations without sacrificing his basic values and standards of conduct "just to be accepted" [e] He has attained sexual adjustment in the sense of being motivated by the moral, spiritual, and personal aspects of sex rather than the biological, with consequent exclusion of fixations crushes, adultery, etc, and he has many close friends of both sexes [f] He evaluates issues critically on the basis of their long-term effect upon the group and on himself rather than from his own selfish point of view [g] He participates effectively in social relations but keeps the amount of participation to a level consistent with his personality, his resources, as well as his needs and those of the social group

Implications for Educational Practice

Not only has the school accepted as one of its primary goals responsibility for the development on the part of the child of socially adequate behavior, but more and more it has provided children with opportunities for building social competence through contacts with other children in both its curricular and co-curricular program [7] This has been

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[7] The school is taking up more and more of the child's time It, therefore, needs to assume responsibility for a greater share of his over-all growth and development

particularly necessary in such cases as the child who is late in maturing, isolated or overprotected either through indulgence or domination on the part of his parents and who, as a result, has not mastered the developmental tasks connected with the social behavior of a given age Unless the school provides guidance and help, such a child s immaturity is likely to cause rejection by his peers and force him to rely even more on immature behavior

The school has, therefore, a responsibility in providing the child with the encouragement, the opportunities, and the guidance whereby he can attain greater social maturity This calls, first of all, for building up his security A prerequisite for social adequacy is security within the setting of one's home and peer group so that one can be freed from being hopelessly dependent on others and from slavishly conforming to group standards and demands Along with this program of building up the security of the child, the school must provide for his participation in social relations Classes organized on a social basis, as in the experience curriculum where he comes to recognize that not only is it impossible for the group to attain its goals unless he makes his contributions but also that his needs cannot be satisfied except through the attainment of group goals, present wonderful opportunities for social growth Student government is another example of the type of activities the school should provide in order to promote social competence Likewise, sports and free play—and especially the childhood gang—exercise a vital role in teaching the child fairness, loyalty, cooperation, friendliness, and other social skills which are needed in the development of socially adequate behavior

The school should be as concerned with teaching social skills as it is with the teaching of the more academic phases of the school program Thus, social dancing has as much a right to be part of the curriculum of the high school as has Shakespeare or Euclid It may also be necessary to provide a child with individual help in overcoming some lack of skill or some personality difficulty which impedes his social adjustment Thus, the school needs to do more than provide the opportunity by means of which children can learn socially adequate behavior it needs to provide definite guidance whereby these experiences can be effective and practice so that such behavior will become habitual and self-sustaining Democracy is not inherent in children and allowing them to make their own plans and their own decisions will not necessarily result in a democratic outlook on their part A class project may result in a few children learning how to dominate the whole show and how to cow the opposition into submission In the same way, student government may result in the training of a few "political bosses," in the learning by the body of the

group that politics is a "dirty mess," and that the way to obtain favors is to go along with those who are "in" It is also unfortunately true that the school's co-curricular program often falls short of its full potentialities in terms of helping children attain social skills because those who are already socially competent hog all the offices and those who need the training most are denied the opportunity to learn On the other hand, the school must not supervise such programs so rigidly that children are denied the opportunity to learn through actual doing On the playground, for example, it is generally best to let children settle their own quarrels whenever they can reach an equitable solution without adult interference In the same way, the teacher should give children as much opportunity to do their own planning as their abilities allow although, to be sure, there seems to be little point in having the teacher abdicate in favor of a demagogue who springs up from within the group

Group Dynamics

IMPORTANCE OF THE GROUP

Another aspect of psychology with which teachers are probably not sufficiently familiar, considering the fact that the classroom has become more and more of a social situation, is that of group dynamics Whereas the simple S–R approach was probably quite adequate from the standpoint of the question-and-answer procedures that characterized the traditional school of years ago, modern methods have emphasized the operation of the total group in its many interactions leading to a need for an understanding on the part of a teacher of group dynamics and group processes

The group is a major force—for good or for evil—in the determination of the behavior of its members, the stronger the group morale, the greater its influence It is an easily observable fact that children behave differently when in groups than they do when alone and this is particularly true when the members are allowed to function as an interacting group rather than simply as a number of separate individuals Thus, a teacher can no more understand a group of children by studying each separately than a physicist can understand the action of molecules by studying atoms in isolation Each group, with its ground rules, its standards, and its code of conduct makes strong demands on its members to conform and, just as a person has a self-concept, so does the group, when closely knit, have ideals and values which it tries to maintain and

perpetuate even to the point of excluding outsiders The individual's attitudes and his behavior depend greatly upon the group of which he is a member and the most effective way of dealing with individual behavior is very often one of dealing through the group and making use of group disapproval to bring the individual into line The influence of social pressures upon individual behavior was shown by Hartshorne and May [168] who found correlations of 23 between the standing of a child and his best friend on tests of deception when the children involved were in different rooms but correlations of 66 when they were in the same room

Teachers in the past have apparently feared that the group might become too cohesive and possibly threaten their authority and security In an attempt to avoid having to fight a well-organized enemy, they have employed divide-and-conquer techniques such as forbidding group discussion of mutual problems and, thus, kept group interaction to the bare minimum In addition, by stressing competition, by playing one child against another, they have fostered resentment and hostility and prevented the development of group spirit Part of the reason for this unusual procedure may lie in the fact that many of our present day teachers went to school in a formal classroom atmosphere and they are still thinking of the classroom in terms of a teacher-*versus*-pupils situation ⁴

Interaction with others is a major influence in determining behavior and learning failure to take advantage of group dynamics to foster educational growth is, therefore, inexcusable Having a group work toward common goals makes for more effective motivation and provides a supportive atmosphere within which the members are accepted as individuals and as co-contributors to group goals, thereby allowing each to use his capacities to best advantage in mutual sharing leading to maximum individual and group growth Many children learn to read, for instance, not because of any great interest in reading but because their friends are learning to read and their notion of being as good as the next child demands that they follow suit or suffer anxiety Furthermore, the fact that the group expects its members to contribute, to get along—or to be squeezed out—is a powerful incentive in promoting the child s growth But if group influences are such as to bring about a threat to his self concept and his sense of belonging, they will detract his energies from the task of growing and make growth more difficult Group dynamics, are, therefore, an important ally—or enemy—in the educative process which the teacher cannot afford to ignore

⁴ The same conflict has characterized labor-management relations in the past There is a slight trend in recent years toward a greater realization of the mutual nature of their interests

For the group to be of maximum benefit to its members, it is neces- sary that there exist a certain cohesiveness among them Grouping can help members meet their needs for mutual support provided each mem- ber is reasonably secure within the group, so that he can use his energies for self- and group-fulfillment rather than in worry over status and with- out having to sacrifice to excess his individuality in order to get ac- cepted Having established this security, he can not only devote himself to new problems but can go out and gain independence from the group Thus, every group leads to its own destruction since only the insecure cannot free themselves from it But when acceptance rests on such a precarious basis, the group is a liability to the members at the fringe whose status is in jeopardy and to the other members as well Under such conditions, the fringe members can either become slaves to the group, become rebels by rejecting the group, or join subgroups and continue under conditions of divided loyalty Thus, depending on the atmosphere of a group, the emotional and social interdependence which characterizes it may lead to individual growth, or to stifling conformity, or to rebellion

While requiring somewhat different skills and understandings, deal- ing with a group is probably no more difficult than dealing with individ- ual children for, besides being more effective from the standpoint of long- term results, it also facilitates the solution to some of the problems the teacher faces Foremost among the abilities required on the part of the teacher is that of developing a cohesiveness—a spirit of we-ness—among the members of the group, for unless this is done, the group will fall apart and none of the possible benefits of group association will materialize Actually, organizing individuals into a group and having them function as a team takes considerable time, energy, and skill, the exact amount of which depending on the past training and experience of the participants but especially on the purposefulness and meaningfulness of the group goals to the members of the group, individually and collectively The latter part of this statement needs to be noted carefully, it is this common- ness of purpose, in terms of goals that are operationally defined and sig- nificant to the individual members as well as to the group, that holds the group together and makes it possible for the group to be of maximum benefit to its members

For a group to function effectively, it is necessary for members to play various roles, depending on the needs of the group in which each finds himself Thus, a person may see himself as the life of the party in one setting, and as a senior member and consultant in another It is, however, necessary that these selves vary only in terms of outward be- havior rather than of fundamental values for, when the person finds him-

self in a hodge-podge of social systems—often antagonistic—he may be placed in a position of playing conflicting roles, e g , the youth active in church organizations and also in semidelinquent gangs Such opposing roles are very likely to result in internal conflicts unless the person can reconcile them in terms of some bigger value Parenthetically, it might be pointed out that the teacher also plays many roles, both in and out of the classroom, some of which are complementary, others conflicting, e g , director and evaluator of learning, friend, guide of youth, and disciplinarian, mental hygiene worker and keeper of academic standards—often not without considerable internal conflict

GROUP CLIMATE

The group climate is of utmost importance in the achievement of growth both on the personal and group level This, in turn, is largely a function of group leadership although, as just mentioned, members also have to learn to operate as a unit Translated to the classroom situation, this means that the teacher is largely responsible—by action or by default—for the climate of the class in which learning is to take place Research has shown that, under proper leadership, wholesome attitudes as well as effective learning can be fostered whereas under different conditions of leadership, the group may deteriorate to the point of fostering negative attitudes which impede learning Probably the most common symptom of faulty group relations is apathy which frequently occurs under autocratic control where the leader is unpopular or the goals are unsuitable In such cases, there is need for a redefinition of group goals in terms of individual and group purposes There may also be need to build up the group and to raise its anxiety level by encouraging a greater degree of ego-involvement, although it may be necessary, on the contrary, to lower the anxiety level to enable it to strive for worthwhile goals Other symptoms of faulty group relationships include lack of communication among members or between the members of the group and the leader, spread of disorder as soon as the leader leaves, and group cleavage Thus, when excessive hostility and frustration build up and the members cannot express this hostility against the leader, they hit upon a minority which can't fight back as a means of releasing tension and isolates, cliques, and scapegoating result

The most widely known study of social climate and group leadership is that of Lewin, Lippitt and White [237] in which groups of boys were placed, in successive periods of seven weeks' duration, under three kinds of leadership autocratic, democratic, and laissez-faire The autocratic leader decided everything what was to be done, when, and how He

praised and criticized but remained impersonal and aloof The democratic leader allowed a maximum of freedom in the determination of policy and participated only as a senior member of the group giving help and encouragement as well as objective praise and criticism The leader under the laissez-faire system did nothing beyond answering questions when he was asked he allowed the boys complete freedom in decision making, did not participate in the activities of the group nor did he praise, criticize or attempt to guide the work of the boys

The results of the study favored democratic control [a] From the standpoint of accomplishment, the autocratic group displayed signs of apathy, listlessness, and general distaste for the work As might be expected since autocratic control relies on authority, as soon as the instructor left the room, work in the autocratically controlled group declined, whereas, in the group under democratic control, work continued as before The laissez-faire group had difficulty in arriving at group goals and there was a tendency for what started out as cooperative work to degenerate into horseplay Frustration mounted as a result of lack of leadership to the point that mutual interference prevented even those who wanted to work from doing so [b] From the standpoint of emotional climate, least tension was found in the democratic group, a fact which suggests that a democratic organization is more conducive to the satisfaction of individual and group needs Hostility was thirty times as prevalent in the autocratic group which also showed less cohesiveness in the sense that contacts between members were largely of the 1–1–1–1 variety There was less cooperation among the members and the group tended to disintegrate more quickly In the laissez-faire group, there was a tendency for a vicious self-perpetuating circle of frustration-aggression-frustration to form

Thus, a democratic social climate appears best It is true, to be sure, that it is difficult to set up an experiment of this kind without prejudicing the results and it is possible that a more understanding autocrat might have more success than was found in this study Nevertheless, there are reasons to believe that autocratic control is conducive to frustration with the following as possible outcomes [a] explosion of bottled-up tension as soon as the repressive influence of the leader is removed, [b] scapegoating as a release of tension which cannot be directed toward the cause of the frustration, namely, the leader, [c] immediate acceptance by the group of anyone rejected by the leader, and [d] attempts by the group to protect itself by applying pressure against the "eager beaver" and the "teacher's pet" Furthermore, autocratic control is conducive to the attitude that someone has to dominate, an idea which is foreign to our demo-

cratic ideals and detrimental to the effective functioning of the classroom
It is generally difficult to prevent the impersonal attitude of auto-
cratic leadership from degenerating into a dictatorial atmosphere Denied
the satisfaction of a warm personal relationship with the group leader
and the assurance of group acceptance, children often resort to asocial
behavior which, in turn, causes the leader to become more dictatorial
and critical Soon the relationship deteriorates from neutrality to ani-
mosity and, as the child disassociates himself from the leadership of the
leader, he simply works to avoid censure rather than to attain meaningful
goals Laissez-faire, on the other hand, suffers from the lack of leader-
ship and, although occasionally a leader will arise within the ranks, he
is not likely to be as well trained as he should be and may have all the
faults of the autocratic leader, except that he may be easier to discard

Supporting evidence for the conclusions of the Lewin, Lippitt, and
White study comes from a study by Brewer [41], the results of which
are summarized by Anderson and Anderson [10] as follows

> The children with the more dominating teacher showed signifi-
> cantly higher frequencies of behavior defined as nonconforming
> to teacher domination, which supported directly the hypothesis
> that *domination incites resistance* In addition, J E Brewer
> found that the children with the more dominating teachers had
> significantly higher frequencies recorded as conforming, looking
> up at seat work, "undetermined" child–child contacts (including
> whispering), and playing with "foreign objects," most of which
> represents the degradation of energy in the school room

In the same way, Baldwin [19] found children from democratic homes
to be more active, aggressive, fearless, planful, original, curious, non-
conforming, and more likely to be leaders whereas children from auto-
cratic homes were more likely to be quiet, conforming, socially unag-
gressive, and lacking in originality and curiosity

In view of the relatively conclusive superiority of the democratic
social climate over the autocratic and the laissez-faire, why is its adoption
in our school still considerably short of being universal? There are, of
course, a number of answers to this question, perhaps the simplest of
which is that teachers are only human and not always oriented toward
what is in the child's—and their own—best interest Also to be noted is
that the studies mentioned compared extremes in democratic, autocratic,
and laissez-faire atmospheres It is conceivable that a more middle-of-
the-road position may be as good, if not better, than any of these ex-
tremes Furthermore, there is always a temptation to feel that democratic

proccesses are slow and that they occasionally lead to confusion and, by adult standards, to unsatisfactory work In such times, the teacher is likely to want to take charge and to expedite matters, forgetting, of course, that the important thing is the learning children do and not how well the job is done And, unfortunately, it is easy to be democratic with a nice cooperative and well-behaved group but the more children are in real need of understanding and democratic handling, the more likely they are to make it difficult by their unruly behavior for the teacher to be democratic with them In such cases, progress tends to be so slow that many teachers give up in the face of the necessity for orderliness in the immediate situation

Sociometric Techniques

In view of the importance of social climate in promoting the all-round development of the members of a classroom, it is desirable that teachers make periodic appraisal of the group structure within their classes Sociometric techniques have been devised for that purpose Generally speaking, the procedure consists of asking each member of the group to list in a one-two-three fashion his choices for a companion in different social settings such as "Whom would like to sit next to in class?", "Whom would you like to have as your discussion group leader?", "Whom would you like to invite to your home?" When these choices are tabulated, it is possible to determine the degree of acceptance of each member of the group, as well as the degree of cohesiveness of the group and the various cleavages, if any The results of such studies are generally shown on a sociogram, many examples of which are to be found in the literature That of Flotow [117] is reproduced here because it incorporates a feature rarely found in other sociograms, namely, areas are shown by circles to mark off the distance from the center of the group in which a given child falls

The primary purpose of the sociogram is to focus attention on group structure as a preliminary step toward the improvement of intragroup relations and the promotion of group acceptance Thus, it might help the isolate become accepted if he were allowed at least one of his choices in connection with the activities listed The teacher should, meantime, accept the child so that he can relax enough to do something constructive toward his acceptance by the group It would also help to encourage the isolate to cultivate some skill or talent that the

group can use it may even be necessary to give personal guidance or to do therapeutic work with him in order to promote his acceptance by the group At times, it may be advisable to have him transferred to a new group where he can make a new start Regrouping and reseating
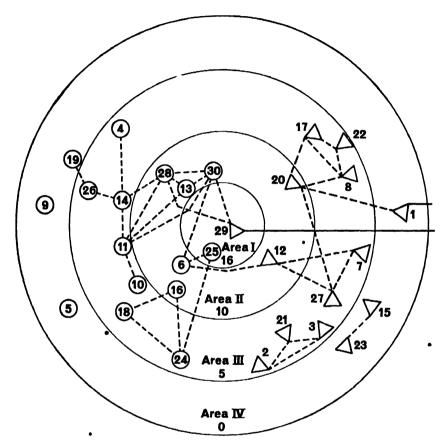
Fɪɢ 6 3 *Sociogram for thirty eighth-grade pupils, showing mutual relationships with pupils in same grade (broken lines) and with pupils in other grades (straight lines) Small circles represent boys triangles, girls Area I includes pupils chosen as friends by other children 16 or more times, Area II, pupils chosen 10–15 times, Area III, pupils chosen 5–9 times, and Area IV, pupils chosen fewer than 5 times After Flotow* [117]

sometimes help break up cliques and bring in the isolate, but it must be remembered that he will become accepted only insofar as he makes a contribution It therefore may be necessary to find him a group in which his abilities can be useful or to provide him with certain skills which are desired by a specific group It may even be possible to find a group work-

ing on an important project in which any additional help is appreciated
It should, of course, be pointed out that not all isolates are in need of
psychiatric help, that group acceptance is not necessarily desirable, and
that there are times when the teacher's worst problem will be not so
much the isolate but rather the close-knit group with antisocial orienta-
tion When the value pattern of the class as a whole is unsound, it may
well be that being an isolate has its virtues

Sociometric techniques can do as much for the teacher in helping
him understand his class as it can do for the pupils Among other things,
it will enable him to pick out the potential leaders with whom he can
work in leading the class to worthwhile goals Teachers are often not
aware of the social status of their pupils and of the social structure of their
classes [36, 158, 272] In this connection, it is interesting to note that,
in Bonney's study, the teachers most correct in judging the social com-
position of their classes were those who had taken courses oriented to-
ward understanding the whole child Whether this points to the effective-
ness of such a course or to the personality orientation of the teachers who
would select such a course, or both, is unclear

HIGHLIGHTS OF THE CHAPTER

▸ The fact that the individual does not live in a social vacuum makes
the development of socially adequate behavior on the part of the child
of immediate interest to the school The following are among the major
concepts relative to social development

[a] Socially adequate behavior is essentially a matter of enlightened
self-interest, i e , of integrating one's needs and purposes with those of the
social group in which one lives for the mutual benefit of both the in-
dividual and society

[b] The child is an individualist he becomes socialized only as he
finds that it is to his advantage to internalize the values of society and to
comply with its demands

[c] Much of our social behavior is influenced by predisposing factors
of an inherited nature On the other hand, the specific orientation of our
social behavior is determined, to a large extent, by social and cultural
forces

[d] Identification is important in orienting the child's early social
development and there is need for worthy heroes with whom the child
can identify.

[e] Resistant and aggressive behavior can be expected as part of the process of attaining social competence

[f] Discipline is an aspect of social growth which can be understood only in terms of the basic determinants of behavior such as discussed in Chapter 2

[g] Social maturity can be promoted by providing the child with security and with the opportunity for practice in socially effective behavior

[h] Because of increased emphasis in the modern school on group interaction, teachers need to become familiar with group dynamics if they are to be effective in promoting academic learning as well as social development

[i] Research has shown that a democratic social climate is more conducive to effective learning and group relations than is an autocratic or laissez-faire atmosphere

[j] Sociometric techniques enable the teacher to determine the social structure of his class as a preliminary step in improving intragroup relations

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QUESTIONS AND PROJECTS

1 In what specific ways can teachers and parents make maximum use of the childhood gang for educational purposes?

2 What safeguards are necessary to prevent democracy from becoming demagoguery? How much leadership should teachers exert in order to ensure efficiency of operation and to prevent usurpation of power by a clique or an individual?

3 In the discussion of leadership, it is implied that a leader must be somewhat of an opportunist ready to lead in the direction in which the group wants to move but reluctant to exert real leadership lest he be left without followers Discuss the validity of this position and its implications for the school and for democratic society

4 To what extent is the teacher, in the final analysis, responsible for the misbehavior which occurs in his class?

5 Debate Autocratic discipline is a short-sighted expedient that is neither easy nor effective

7

Intellectual Development

ALTHOUGH SCHOOLS have come more and more to accept responsibility for all phases of the child's growth and development, and although all aspects of such development are recognized as of fundamental importance, the emphasis is still largely upon the intellectual This is partially explained by the fact that many people not only look upon intelligence as essentially synonymous with learning ability but also consider the learning of academic material to be the primary, if not the sole, justification for having schools at all Although the latter view is not as prevalent today as it was years ago, the stress on grades and on standards, which is still very much with us, does not let the teacher forget that Johnny must learn to read, to add, to subtract, and to spell—and up to a certain standard, too, if unpleasantness is to be avoided On the other hand, the fact that Johnny does not mix with his peers, that he is moody and that he pouts, that he can't control his emotions is to the general public, less associated with failure on the part of the school It is only when juvenile deliquency (or some other problem) gets out of hand, that someone remembers that the school should have done something about it—just what, how, and when is not clear

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Aspects of Mental Growth

Although the layman is fairly clear—even though usually in various degrees of error—as to the meaning of such terms as intellectual development, intelligence, and IQ, no such unanimity of viewpoint exists among experts in the field even in such basic essentials as the definition, the nature, or the constituents of intelligence There is, however, general consensus as to the following aspects of mental development

[a] Mental development involves a widening of intellectual and temporal horizons from those stimuli immediately impinging upon the child to those more remote in time and space As the child becomes older, he is progressively more capable of thinking in terms of yesterday and tomorrow, in terms of what is there rather than merely what is here, and such terms as foresight and memory become part of the vocabulary which characterizes his expanding mental ability

[b] Mental development involves an increase in the ability to deal with the abstract and with symbols in manipulating one's environment Probably no other aspect reveals more clearly the child's mental development than his ability to use language This development, as other forms of development, is most rapid in early years with the child's spoken vocabulary reaching from 150 words at age two to some 2500 words as he enters school [352] (He can recognize nearly four times as many) In addition, there is a corresponding increase in the clarity of his concepts and in the length and complexity of the sentences with which he expresses his ideas

This development of linguistic facilities rests upon an inherited basis and upon motivation and environmental opportunity as can be noted from studies comparing the language development of people of different sex, socioeconomic status, and cultural background Thus, as seen in the data shown in Figure 7 1 [244], there is a definite sex difference favoring girls in the length of the sentences with which young children express their ideas in fact, as pointed out by McCarthy, that the female is more talkative than the male is more than idle talk Girls are more articulate, use more advanced sentence forms, drop infantile speech earlier, have fewer speech defects At eighteen months, they outtalk boys nearly three to one in both the total number of words as well as in the number of different words used in a given period of time and, although the relative difference between the sexes decreases with age, girls maintain their advantage at least through the preschool period and probably throughout life They also outdo boys in written work according to LaBrant's

study [222] in which girls were found to use an average of 148 3 words per theme to 124 7 words for boys Perhaps having a more definite environmental slant are McCarthy's findings that the mean sentence length of five-year-old twins is slightly below that of three-year-old singletons Also worth noting is the fact that the feebleminded child is always late in
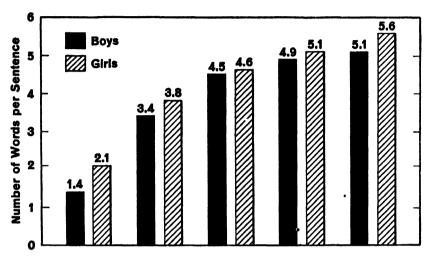
Fig 7 1 *Sex differences in language development After McCarthy* [244]

talking whereas the child who talks early is almost always above average in intelligence The reverse statement cannot be made, however

[c] Mental development involves an increase in the ability to concentrate for progressively longer periods of time The young child not only has a short attention span but his ability to keep at a given task without suffering from fatigue is correspondingly limited Just how short a period should be for children in the primary grade is a matter for the teacher to judge on such bases as the nature of the task and its appeal to them in relation to their readiness level

[d] Mental development involves a decline in daydreams and make-believe As the child becomes older and more capable of doing things, the less he has to rely on the world of fantasy which occupied much of his time in early years It must be noted that the daydreams of the child are not retreats from reality but rather way-stations toward reality enabling the child to taste reality without having to suffer the full consequence of whatever mistake he might make The decline in make-believe tends to correspond with his greater ability to see its incongruity, to his greater ability to deal with reality, and to an increased interest in television, motion pictures, and stories which, of course, continues into adulthood

[e] Mental development involves an increase in memory Contrary to popular claims that childhood is the golden age for memorization (often used as an argument to have children learn from memory things which they do not understand), the child's memory, like his other functions, is far from having reached its peak This may, of course, be expected from a consideration of the fact that [1] his use of language, which constitutes an effective tool by means of which things can be remembered, is far from fully developed, [2] his experiences which form a background within which future experiences are integrated are as yet limited, and [3] the clarity of his perceptions and his understandings, which are essential to memory, do not reach a peak till early adulthood

[f] Mental development involves an increase in reasoning ability Since it depends on the development of perception and the acquisition of experiences, among other things, the growth of reasoning ability is a gradual process—although, even the baby can reason as can be inferred from the way he manipulates his environment in order to get what he wants On the other hand, childhood reasoning is often naive and faulty This is quite understandable since [1] the child has not reached the peak of his mental development, [2] he is lacking in experience, and particularly in the generalizations and principles which are necessary for the discovery of hypotheses and the evaluation of tentative solutions, [3] he is lacking in vocabulary and other tools with which to manipulate ideas, [4] he is generally lacking in persistence and in attention, and [5] he tends to be swayed by emotional factors which color reason However, it must be noted that adult reasoning is also often naive and faulty and that there is no fundamental difference—except in degree—between the thought processes of adults and children

Nature of Intelligence

Probably no other area of psychology has been the subject of so much controversy as that of intelligence As mentioned previously, not only have psychologists been unable to agree on a definition but neither do they agree on its nature or even its basic components Many authors dealing with the topic simply accept the layman's use of the term and make little, if any, attempt to define or analyze it Those who do give a definition or analysis, display considerable difference in viewpoint although such phrases as "abstract reasoning," 'discovering relationships," "ability to learn," "rational behavior," and "dealing effectively with one's

environment" tend to be used with a certain frequency by authorities in the field while discussing the topic Perhaps one of the most comprehensive definitions is that of Gates et al, [130] who refer to intelligence as

> a composite or organization of abilities to learn, to grasp broad and subtle facts, especially abstract facts, with alertness and accuracy, to exercise mental control, and to display flexibility and ingenuity in seeking the solution of problems

The first successful attempt to measure intelligence was that of Alfred Binet who, at the turn of the century was asked by the French government to investigate the causes of retardation in the schools of Paris Conceiving of intelligence not as a unitary trait but rather as a composite of many abilities, he set up a number of questions dealing with areas with which every child, while lacking in knowledge of the specific questions, would nonetheless be somewhat acquainted His approach of sampling many different types of performance in which intelligent behavior could be displayed proved sufficiently successful that, in 1905, with the help of Theophile Simon, he devised the first intelligence test, which has since served as the basis for many of the later tests including a number of those in current use

The relatively wide difference in viewpoint as to what constitutes intelligence can be noted from a study of the content of the intelligence tests on the market Probably the most basic intellectual function involves the ability to perceive relationships such as might be involved in the following 'In what way is a baseball and an orange alike?" or "A bird flies, a fish —— ' [379] Most tests include at least some items of this nature Some of the better tests incorporate a relatively large variety of items designed to measure different phases of mental ability e g, vocabulary, verbal comprehension, abstract reasoning, memory for words and digits ingenuity spatial relations Many, however rely on a simple combination of verbal and numerical items with the verbal section weighted more heavily than the numerical In fact, the verbal component of intelligence is not only probably the most widely accepted single constituent of intelligence but also one of the easiest to measure, and some tests measure the verbal factor almost exclusively much to the chagrin of some psychologists who feel that intelligence tests, supposedly designed to measure intelligence, do nothing more than deal with the material encountered in the classroom and, as a result, penalize students who do not do well in schoolwork

The theoretical picture of the nature of intelligence is no more clear than the practical problem of measuring it Even though the problem has

received considerable attention, especially in the early part of this century, relatively little agreement has been reached and most psychologists either accept one or the other of the earlier viewpoints or take the stand that clarification of the theoretical aspects will not add materially to the adequacy of the measurement Theoretical differences in the points of view seem to center around whether intelligence is a unitary trait as proposed by Spearman, in 1904, or whether it is a composite of many factors as proposed by Thorndike and Thurstone a few years later

SPEARMAN'S TWO-FACTOR THEORY

Spearman [357] postulated that intelligence is composed of a general factor g which underlies all mental functions and a multitude of s factors, each specific to a given task He also accepted the likelihood that the s factors dealing with tasks of the same general nature can be combined into what may be called a *group factor* According to this theory, a child's ability to do a problem in arithmetic would depend on the quality of his g and of his s factors dealing with the particular problem General proficiency in arithmetic would imply possession of a substantial g and of adequate group factors in the functions involved in arithmetic Thus, two persons might differ in the amount of g as well as in the quality of the specific s factors or the group factors involved in a given task It is, therefore, possible for a person who is relatively more intelligent than another by reason of a superior g to be less capable in a given area, e g , mathematics or music, because of relatively inferior s or group factors in that area On the other hand, since Spearman postulates g as a form of mental energy permeating all mental operations, it would be most unlikely for a person who is relatively lacking in general intelligence to be particularly capable in a specific field

THORNDIKE'S MULTI-FACTOR THEORY [THEORY OF SPECIFIC INTELLIGENCE]

According to Thorndike [390], intelligence is made up of a multitude of specific and independent neural connections, i e , intelligence is simply the summation of all the abilities involved in mental acts, each separate and independent of the others Thus, according to this theory, a bright person would simply have *more* neural connections of an adequate nature than would the dull person, a view which is, of course, consistent with his S–R bond theory of learning

He also classified intelligence as abstract (ability to deal with ideas and symbols), concrete (ability to deal with things), and social (ability to deal with people and social situations), and postulated such attributes of intelligence as altitude or, level (the difficulty of the problems in any

one field which the individual can master), range (the number of fields in which a person is adequate), area (the product of level and range), and speed Thorndike's most widely known contribution to the area of intelligence is the C A V D , a test of intelligence composed of four sub-tests sentence completion, arithmetic reasoning, vocabulary, and following directions

THURSTONE'S THEORY OF THE PRIMARY MENTAL ABILITIES

The theory proposed somewhat more recently by Thurstone [392] as a result of his studies involving factor analysis, conceives of intelligence as made up of a number of mental abilities in the relative amount of any one of which people would not only differ from one another but also within themselves A person may, for example, have generally less of most of these abilities than another person (and thus, be generally less bright) but he may have considerably more of one ability which would make it possible to excel in the tasks where this ability is of paramount importance Of course, to the extent that many tasks involve a combination of these abilities, a person would be restricted in.intelligence by a particular weakness in any one area

The exact number of primary mental abilities in which a person's mental equipment could be subdivided is impossible to determine Whereas, Thurstone first listed nine, his Chicago Primary Mental Abilities Test measured only seven—verbal, numerical, spatial, word-fluency, inductive reasoning deductive reasoning, and memory—and his later S R A Primary Mental Abilities Test measures only five The problem, of course, centers around the fineness into which these abilities should be broken it is generally agreed that most of the factors obtained through factor analysis are composites of a number of abilities and that, consequently, they can be broken down into more basic factors The practical problem of devising tests of sufficient precision to measure them and the relatively slight psychological gains to be derived therefrom make this inadvisable, however, and Thurstone, for example, abandoned the distinction between inductive and deductive reasoning and settled for the measurement of a single reasoning ability

RECONCILIATION OF INTELLIGENCE THEORIES

These theories are not as contradictory as would appear on the surface This is particularly true of the theories of Spearman and Thurstone which, except for different emphasis on the general and specific factors can be reconciled without doing violence to the theories themselves Thus, Spearman's group factors might well be the counterpart of

Thurstone's primary mental abilities and Spearman has recognized this point [356] Contrariwise, since Thurstone's abilities do not account for the total variance in the performance of different individuals, there is room for a general factor and, in recognition of this fact and of the lack of complete independence among the different abilities measured by his tests, Thurstone has conceded the likelihood of a general factor [393]

The differences in the two theories reflect a difference in purpose Thus, Spearman's emphasis on a general factor leads to the calculation of a single measure of general intelligence as commonly used in the grade school Thurstone's approach, on the other hand, provides a score on each of a number of relatively independent abilities and permits the drawing up of a profile of abilities in specific areas which may be used as the basis for vocational guidance [1] Both approaches are useful the needs of the teacher in the lower grades may be fully served by a single IQ score whereas, in high school, tests that give scores on different abilities may be more functional from a guidance point of view

Measurement of Intelligence

BASIC CONCEPTS

Intelligence is a relative term a person is not bright or dull but rather is brighter or duller than the members of the group serving as the basis of comparison Therefore, the intelligence of a child has to be measured in terms of the relationship between the level of his mental development and that of other children of his own chronological age

Mental development is measured in terms of mental age or MA, and it is first necessary to understand this concept If one were to measure the mental development of a large representative group of children who are, say, exactly ten years of age, the average mental development of this group would also be ten years, they would have a mental age of 10, i e , the mental development which is average for ten-year-olds In the same way, an MA of 6 represents the mental development which is average for children who are six years of age, and so on for an MA of one through at least thirteen [2]

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[1] Thurstone allows for the combining of the scores on the various abilities measured by the S R A Primary Mental Abilities Test into a composite measure of general intelligence, but that is not the basic purpose of the test

[2] This working definition of the MA breaks down after the age of approximately thirteen, as we shall see, but it is still useful to understand its basic meaning as it applies to children

The child's mental age is obtained from his perforance on an intelligence test Thus, on the Revised Stanford-Binet Scale of Intelligence, he is asked to define words, to repeat digits forward and backward, to solve practical problems, each item giving him credit for 2, 4, or 6 months of mental age the addition of which provides his MA On other tests, the testee's raw score is simply converted by means of a scale, or norms, into the corresponding mental age, e g , a child getting a raw score of 119 on the California Test of Mental Maturity (Primary) [374] would have a mental age of 9 years because, when this test was standardized, the nine-year-old segment of standardization sample averaged a score of 119 on the test

However, for a child to have a mental age of 9 is relatively meaningless since it would make a difference if he were chronologically 6, 9, or 12 In the first case, with the mental development of the average nine-year-old while still only six, he would be very precocious, whereas in the second case he would be exactly average, and in the last case, he would be mentally retarded or dull Thus, the child's mental age has to be considered in terms of his chronological age, (CA), or more correctly, in terms of the mental age of children of his own chronological age This relationship or ratio between one's mental age and chronological age is known as the Intelligence Quotient, or IQ

The computation of the IQ of the child involves only simple arithmetic, even when either or both the MA and the CA are fractional Thus, if a child has an MA of 11 years, 5 months (written 11–5) when tested at a CA of 9 years, 6 months (written 9–6), his IQ would be computed as follows

$$IQ = \frac{Child's\ MA}{Average\ MA\ of\ children\ of\ his\ CA} \times 100 = \frac{MA}{CA} \times 100$$

$$\frac{11-5}{9-6} \times 100 \qquad \frac{137\ months}{114\ months} \times 100 = 120$$

In this case, the child's mental development is somewhat accelerated by comparison with that of children of his own chronological age, or more correctly, his mental development is proceeding at the rate of 120 percent of that of the average child The IQ is an index of relative brightness and it gives the basis for estimating the mental level a child will reach at a given age Thus, if a child has an IQ of 120 when tested at a chronological age of 9–6, all we have to do is to reverse the formula for the IQ and calculate the mental age for any given chronological age For example, we might expect him to have an MA of (approximately) 12 when he

reaches a CA of 10 This, of course, assumes that the child's IQ will remain constant, an assumption which is only relatively true, as we shall see

Mental growth does not continue throughout the entire period of one's life any more than does physical growth, in fact, it begins to slow down rather sharply in rate during the early teens and it reaches its peak somewhere in the middle twenties The general shape of the mental curve for three different IQ levels is shown in Figure 7 2 but it must be remembered that these curves represent averages for a large number of testees and sizable departures from such group averages can be expected in the individual case
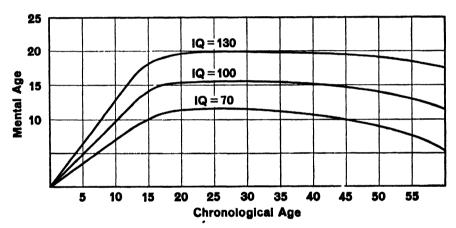
FIG 7 2 *Hypothetical mental growth curves for three IQ levels The shape of the lines is only approximate The extent of the decline with age, for example, depends greatly upon the nature of the test material used*

According to general consensus, one's mental development starts to taper off around age thirteen so that in the three years from ages thirteen to sixteen, mental development increases only the equivalent of two mental years, and therefore, at age sixteen the average person has a mental age of 15 (not 16) Consequently, unless some compensation is made for the declining rate of mental growth, a person's IQ would become progressively lower as his mental age was divided by a chronological age of seventeen, twenty, forty The usual compensation made to take care of this problem in computing the IQ is to use a chronological age of fifteen as the maximum divisor so that a person with an MA of 15 when tested at age twenty would have an IQ of 100, not 75

The age at which mental growth ceases is open to debate Wechsler

[412] is of the opinion that most mental functions reach their peaks in the mid-twenties—although his data show relatively little gain after sixteen Corroborating evidence comes from the well-known fact that college seniors do better on intelligence tests than they did as freshmen, and from the results of the Harvard Growth Studies which point to intellectual gains up to approximately age thirty, with some two percent taking place after twenty-one or twenty-two However, it is relevant to note in this connection that Lorge [243] found that, out of a hundred men roughly comparable in IQ at age fourteen retested some twenty years later, those who had stayed in school longer made greater gains than those who had left school earlier Likewise, Worbois [427] found that children attending superior schools made gains in intelligence test scores whereas children in less adequate schools made no gains and even suffered losses

Thus, performance on mental tests probably does not cease to improve at age fifteen or sixteen but whether to accept or reject these findings as evidence of increased intelligence revolves around what we mean by intelligence Certainly, as a person becomes older, he gains experience which contributes to the solution of problems such as those included in intelligence tests, but the gains in IQ which may result would stem from increased experience rather than from increased intelligence whereas intelligence tests are supposed to measure the latter rather than the former [3] Thus, the increase in test performance from the freshman to the senior year might in effect reflect a type of coaching not entirely unlike giving the child the answers to the questions before beginning the test In the same way the fact that Tuddenham [399] found the test performance of the draftees of World War II significantly superior to that of the draftees of World War I might more logically be attributed to the effect of better'schooling than to real intellectual gains over a period of a generation [4] Thus, the age at which mental growth ceases is a matter of debate and for want of a better answer, the current practice of using 15 as the maximum divisor is reasonably acceptable, especially since regardless of their admissibility as true gains in intelligence, the gains in test performance occurring after age fifteen are relatively small

[3] Some people argue that intelligent behavior is intelligent behavior and that, from a practical standpoint, the distinction made here is essentially irrelevant

[4] It is generally accepted that the average IQ should remain relatively close to 100 from generation to generation On the other hand, in view of the higher rate of reproduction among the lower socioeconomic classes (where the average IQ is lower), it might be argued that the national average IQ is on the decline Probably the greatest single factor responsible for the difference in test score from World War I to World War II is that of the greater adequacy of the sampling used in the recent war

A similar problem exists at the upper level of the chronological-age scale Since the mental-growth curve shows a decline with advancing age while the divisor remains at 15, the IQ of older people is bound to show a continuous drop Thus, for the period from twenty to perhaps forty, a person's mental level remains fairly constant, after which a gradually accelerating decline sets in This loss is not appreciable for the average person till perhaps age sixty and, as is shown in Figure 7 2, the mental level of gifted people probably never goes below the maximum level of people of average intelligence In fact, there are many examples among older educators and statesmen of people exhibiting great mental alertness despite advanced age Others, on the other hand, especially the uneducated, suffer early and sharp losses, although it is doubtful whether a test could be devised that would give a true picture of the intelligence of such persons

The amount of decline in IQ registered with age would depend on the material included in the test Results of the Wechsler-Bellevue test [412] show that performance on the subtests on information, comprehension, vocabulary, object assembly, and picture completion holds up well with age whereas performance in the subtests on digit span, similarities, block design, arithmetic, and digit symbols undergoes considerable decline Evidence seems to indicate that the greatest loss on test performance occurs in tests where speed and seeing relationships are

TABLE 7 1

LEVEL OF MENTAL AGE WITH INCREASING CHRONOLOGICAL AGE *

CA	MA	N
15–19	17–5	51
20–24	17–3	40
25–29	˙17–4	40
30–34	16–8	43
35–39	16–7	44
40–44	16–6	48
45–49	16–6	42
50–54	15–11	63
55–59	15–4	50
60–64	15–1	50
65–69	14–3	53
70–74	14–1	42
75–79	13–0	20
80–84	11–6	13
85–89	11–10	5

' from Miles and Miles [265]

involved and this is perhaps due to rustiness with this sort of situation
The general consensus, based on considerable research, is that the losses
in intellectual capacity occurring before the middle fifties are relatively
minor, a conclusion the validity of which can be appreciated from a
survey of the Miles and Miles data [265] reproduced in Table 7 1
and of the graph of the standardization data of the Wechsler adult scale
of intelligence shown in the next chapter The data of the Jones and
Conrad study [197] also support this view It is agreed that when it
comes to a matter of learning ability and effectiveness of behavior, the
added store of experience of an older person may compensate in good
part for his declining intelligence Thorndike [382], on the other hand,
placed the loss in learning ability from ages twenty-two to forty-two at
15 percent but, as just stated, much would depend on the specific mate-
rial involved

INTELLIGENCE TESTS

There is available on the market today a relatively large number of
intelligence tests designed for individuals from the preschool to the adult
level Most of these are of reasonably high quality from the standpoint
of the purpose and the group for which they are intended and it is up to
teachers and school officials to select the particular instruments which will
serve their special needs Evaluating intelligence tests calls for a con-
siderably greater understanding of the principles of test and measure-
ments than this text can provide in the limited space available The
following paragraphs are given simply for purposes of orientation and
the reader is referred to the many excellent texts on educational and
psychological measurements and to the excellent series of Mental Meas-
urement Yearbooks [51] for a more complete discussion

In order to provide meaningful results, tests of intelligence, just as
other instruments of measurement, must possess certain characteristics
primary among which are validity and reliability These terms will be
discussed in Chapter 14 and it may be well for the student who is not
familiar with these concepts to turn to the appropriate section of that
chapter now The present discussion is limited to the following points

[a] To be valid, a test of intelligence must measure intelligence and
not some other aspect of the personality This poses quite a problem
inasmuch as there is no agreement as to what intelligence is or even as
to what factors are to be included or excluded Test makers generally
rely on agreement of the scores provided by their tests with such criteria
as teachers' judgment of pupil ability, success in school, and scores of
other tests purporting to measure intelligence It is, of course, obvious

that these are relatively inadequate criteria of intelligence and the lack of more substantial agreement of intelligence test scores with these criteria can be blamed on the test, on the criteria, or on both

[b] There are certain groups of people for whom the average intelligence test cannot give a valid measure of intelligence Among these may be mentioned the bilingual and the foreign born child measured by means of a test involving language To the extent that the test was designed to measure the intelligence of children without a language handicap, those of a different tongue are going to do poorly not necessarily because of lack of mental ability but simply because of the lack of opportunity to learn the language in which the test is given In the same way, a child with a reading problem will tend to be underestimated as to IQ if he is given a test involving a considerable amount of reading Other groups for whom the average intelligence test does not give valid scores include children who are emotionally upset, who are uncooperative, who are deaf or blind in various degrees, who are timid, or whose home background has been relatively limited in intellectual stimulation [5]

[c] A test of intelligence should also be reliable, that is, consistent The average intelligence test is fairly reliable although as we shall see fluctuations of up to 5 IQ points can be expected upon re-test in two-thirds of the cases and even greater fluctuations in the remainder

Intelligence tests can be classified into [a] individual tests (e g , the Revised Stanford-Binet test and the various forms of the Wechsler scale) which involve the testing of a single individual at a time and which, consequently, tend to give more accurate results, and [b] group tests which can be administered to large groups at one testing with a resulting saving in time, cost, and effort Tests can also be classified into either verbal or performance The majority of tests, and particularly of group tests, are essentially verbal in nature On the other hand, such tests as the Wechsler scales and the California Test of Mental Maturity give separate verbal and performance IQ's in addition to the total IQ and, of course, there are tests that depend on performance in nonverbal materials entirely The latter are useful when dealing with a child having a language or reading handicap

RANGE OF INDIVIDUAL DIFFERENCE IN 'INTELLIGENCE

Results of intelligence tests indicate that people do not fall into distinct categories of dull, average and bright but rather they extend from

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[5] All that can be said in such cases is that the obtained IQ is probably an underestimate of the testee's true intelligence There is no way of making a correction in the IQ for deviations from normal in the testee's background

very dull to very bright and that the distribution of intelligence tests scores, as the distribution of many other human characteristics, tends to follow what is known as the normal curve The distribution in Figure 7 3
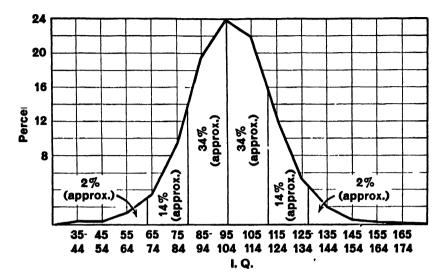
Fig 7 3 *Distribution of the IQ s on the Revised Stanford-Binet Adapted from Terman and Merrill* [379]

is based on IQ's obtained from the Revised Stanford-Binet [379] but, while the use of other tests might make slight difference, the results would be essentially the same Thus, approximately one-third of the general population of American-born whites for whom the test was designed have IQ's from 84 to 100 while one-third have IQ's from 100 to 116, and so on for the other percentages which can be read directly from the chart · It is rather difficult to determine how far the curve extends toward either extremity but it is probably true that some idiots have IQ's relatively close to zero At the opposite extreme, some of the famous people in history, such as those listed in Table 7 2, had IQ's approaching 200 as a minimum estimate, many very likely had considerably more The above distribution of IQ's is of immediate interest to the classroom teacher, especially when converted to the corresponding mental ages for the children in the class Thus, in the typical ungrouped class of some thirty pupils, there is likely to be perhaps one or two relatively gifted as well as one or two relatively dull From the standpoint of classroom performance, this means, as we shall see in Chapter 15, that there is likely to be perhaps one child who has the mental development necessary to do work two or three grades in advance of his present grade

placement while there is likely to be another child whose mental age would be average for children two or three grades below the grade in which he is currently enrolled

<div align="center">

TABLE 7 2

ESTIMATED MINIMAL IQ's OF CERTAIN FAMOUS PERSONS *

</div>

	Estimated IQ	
	I †	II †
John Quincy Adams	165	165
Napoleon Bonaparte	135	140
Robert Burns	130	130
Charles Dickens ‡	145	155
Charles Darwin	135	140
Benjamin Franklin	145	145
Johann Goethe	185	200
Thomas Jefferson	145	150
Abraham Lincoln	125	140
John Stuart Mill	190	170
Wolfgang Mozart	150	155
Walter Scott	150	150
George Washington	125	135
James Watt	140	145
Daniel Webster	145	150

* from Cox [380]
    † The first estimate is based on accomplishments up to age seventeen, the second based on accomplishments from seventeen to twenty-six
    ‡ When a correction is applied to compensate for insufficient data, Dickens IQ is estimated at 180 Similar corrections place the IQ's of Darwin, Mozart and Scott at an estimated 165 [264]

Uses of Intelligence Tests

USE FOR CLASSROOM PURPOSES

Despite its limitations with respect to validity and reliability, experience has shown the IQ test to be of definite value in promoting a greater understanding of the individual with a view of predicting some aspect of his future behavior Consequently, it is an indispensable tool in such fields as education, psychology, sociology, industry, and others However, intelligence tests were devised in connection with school problems and they continue to be very much oriented toward the work of the school In fact, it is probably true that well over 75 percent of the

intelligence tests used are administered in school-connected situations

With regard to educational practice, intelligence tests serve their primary function in helping the teacher determine the ability of the individual child as a prerequisite to gearing the instruction program to his ability level and to determining the quality of work to be expected from him Implied in the above statement is the use of intelligence tests in predicting future success and in doing diagnostic and remedial work with children not working up to capacity Intelligence tests also serve as a partial basis for classification and assignment of students to special classes Some of the evidence related to the value of intelligence tests in connection with school problems will be reviewed in the following paragraphs

[a] That imbeciles and idiots cannot succeed in the usual classroom situation is so generally accepted that persons of such low IQ's are usually denied admission to a regular classroom At the opposite end of the intelligence scale are the gifted such as the geniuses of history whose brilliant academic records sometimes border on the fantastic J S Mill studied Greek at the age of three, Ruskin was writing poetry at six, and some 2 percent of Terman's gifted learned to read at the age of three —to give a few examples But, even in the more normal range, there is a definite tendency for academic achievement to go hand in hand with IQ In Bradley's study at the high-school level [40] the data of which are reproduced below, it is evident that the brighter students got more than their due share of the A grades—the group with IQ's above 140 obtained sixteen times their proportional share of the A's given—while the duller

TABLE 7 3

RELATIONSHIP OF HIGH AND LOW MARKS TO MENTAL ABILITY

IQ	% of pupils	No of A's	% of A's	Ratio of % of A's to % of pupils	No of D's	% of D's	Ratio of % of D's to % of pupils
140–149	0 2	12	3 2	16 0	0	0 0	0 0
130–139	1 3	40	10 6	8 1	0	0 0	0 0
120–129	7 5	96	25 5	3 4	0	0 0	0 0
110–119	22 5	132	35 1	1 6	0	0 0	0 0
100–109	32 5	68	18 1	0 6	12	13 7	0 5
90–99	25 3	16	4 3	0 2	28	36 8	1 5
80–89	9 7	12	3 2	0 3	32	42 3	4 3
70–79	1 0	0	0 0	0 0	4	5 3	5 3
Total	100 0	376	100 0		76	100 0	

* from Bradley [40]

students collected a correspondingly greater share of the *D*'s Corrobora-
tive data are to be found in the study by McGehee [246] in which it was
found that 63 percent of the students in the top three deciles in in-
telligence got *A*'s while only 10 percent in the lower three deciles ob-
tained *A*'s

Research has repeatedly shown a sizable relationship to exist be-
tween IQ and success in school, especially in connection with the more
academic subjects The following correlations, taken from Burt [52],
are reasonably typical composition, *r* = 63, reading = 56, arithmetic,
r = 55, handwriting, *r* = 21 These correlations tend to be higher in
grade school than they do in high school and college where nonacademic
factors become more important determinants of academic success

[b] It generally takes an IQ of 120 to do acceptable work in a first
rate college with an average expenditure of energy and time and 130
IQ is about average for graduates of good colleges [396] Keys [210]
has calculated that for IQ's from 70-84, chances are two out of three
that a person will not go beyond high school and chances of graduating
from college are nil, as opposed to only one chance in five of stopping
after high school for those of IQ's from 120 to 129 Likewise, as shown
in the chart (Fig 7 4) [276], the failure rate in medical school is definitely
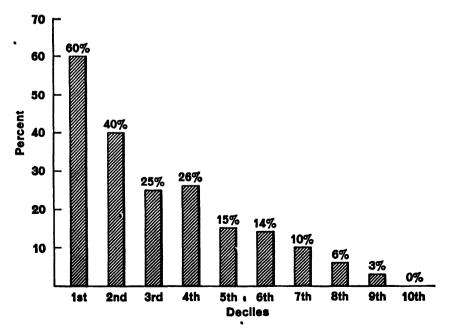
FIG 7 4 *Relation between failure rate in medical school and ranking
on medical school entrance test scores After Moss* [276]

related to IQ level 60 percent of the students in the lowest decile failed, for example, while none of the students in the top decile did Of course, these data do not mean that academic success is denied the person with a low IQ it only means that his chances of success are somewhat less and that he will have to have special assets or to work harder in order to compensate for his limitations in intelligence

Thus, there is ample evidence to suggest that the degree of difficulty the child is likely to encounter in his schoolwork is very closely related to his IQ There are, of course, variations in the scholastic achievement of pupils of a given IQ, since intelligence is not the only factor having a bearing on school success In fact, all that can be expected from intelligence tests is that they indicate what the child could do, but not what he will do, since motivation, emotional blocking, work habits, other responsibilities, ability to get along with the teacher, and other factors have an effect on his success in the classroom In fact, in a study by Schmidt [321], 27 percent of a group of feebleminded students (average IQ $= 52$) got through high school in four years Nevertheless, if we accept learning ability as an important aspect of intelligence, there must be of necessity be a relationship between IQ and success in school

That a correlation between IQ and success in school should exist is not surprising when one considers the extent to which test makers have incorporated into their tests of intelligence situations that are closely akin to those common in the classroom years ago Kelley [206] pointed out that there was a 90 percent overlap between the material included in tests of intelligence and that incorporated in tests of academic achievement A more recent study by Coleman and Cureton [67] puts the overlap between tests of intelligence and academic achievement at 95 percent This would automatically make for correlation between the two variables and teachers might properly suspect that any IQ test which boasts of a very high correlation with academic achievement is really not measuring intelligence at all Actually, the principal point of difference between a test of intelligence and a good test of academic achievement is one of orientation the latter is concerned with the student's ability to use in meaningful situations the material covered in the course or courses for which the test is designed, the former attempts to test the student's ability to deal with meaningful situations on the strength of material not so specifically covered in his academic courses But certainly, the courses a person has taken can be expected to contribute to his performance what would the curriculum be for if it did not contribute to intelligent behavior?

Among the severest critics of the orientation of present-day intelligence tests are Davis and Eells [86, 108] who feel that test designers

have accentuated the socioeconomic differential in IQ by choosing items which are unfair to children from homes of lower socioeconomic status They point out that while test makers, in devising their tests, deliberately choose items that do not discriminate between boys and girls on the supposition that the two sexes are of equal ability, they, on the contrary, deliberately choose items that discriminate on the basis of scholastic success which, because of the unsuitability of school material to children of the lower class, is the equivalent of deliberately seeking items which discriminate against them In other words, they feel that the IQ differential among the social classes reflects a cultural bias in the test material and not a real difference in ability

They argue further that this unfairness of the tests for children of lower socioeconomic status has resulted in considerable harm to them Because the tests are loaded with material which is relatively silly and meaningless in terms of their experiences and interests, these children are first mislabeled as dull, which leads the teacher to expect rather little from them and therefore to deny them the benefit of more advanced instruction and more meaningful learning experiences Soon everyone, including the children themselves, is convinced of their dullness and, as a result, they are deprived of the opportunity of achieving the success that could be theirs were new objectives and new methods to be stressed The same argument could be used in the case of the child with an educational problem a child with a reading difficulty, for instance, would tend to get a low IQ and, as a result, the teacher is not likely to see his need for remedial work which would permit him to improve both his academic performance and his intelligence test score Their solution lies along the lines of a culture-fair test of intelligence, i e, the Davis-Eells Games [87], in the construction of which an attempt has been made to abandon the conventional emphasis on academic and verbal material with its typical middle-class bias and to replace it with illustrated practical problems which, presumably, would be more fair to all cultural and socioeconomic groups

The answer to the charges involves many considerations It cannot be denied that children from the lower socioeconomic classes are undermeasured in intelligence by current tests and, conversely, that children of higher socioeconomic home and community backgrounds are overmeasured The whole problem stems from the fact that we cannot measure intelligence directly but must estimate it indirectly through performance on tasks calling for intelligent behavior As a result, we measure ability rather than capacity, what has been learned rather than what can be learned this is undeniable—and unavoidable

That IQ differences are to be found between the various socioeco-
nomic groups has been shown rather conclusively the Harvard Growth
Studies, for example, showed that, for the ages eight to eighteen, the
IQ of children of white-collar parents tend to average consistently around
108 while children of unskilled parents have an average IQ of approxi-
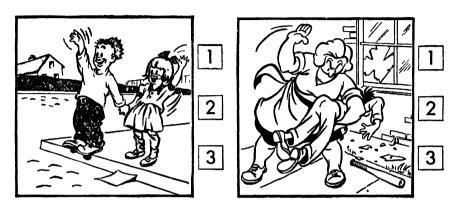
Fig 7 5 *Samples from the Davis-Eells Game* (*elementary*) *The
directions in Sample B call for a choice between* (*1*) *They are waving at
a boy,* (*2*) *They are waving at a girl, or* (*3*) *We cannot tell from this
picture* whom *they are waving to The directions in Sample C give the
alternatives The boy did not wear his shoes,* (*2*) *The boy* broke the
window, *and* (*3*)Nobody can tell *from this picture* what *the boy did
From Davis-Eells* [87]

mately 96 The interpretation of this IQ differential, however, is another
matter The basic question to be answered is "What purpose do we expect
intelligence tests to serve?" If we are interested in the testee's true in-
telligence, it seems obvious that our present tests are not fair to children
of the lower socioeconomic groups, but if we are interested in IQ's for
what they lead us to expect by way of academic and occupational per-
formance, our present tests are reasonably satisfactory No doubt that,
just as Terman and Merrill did with sex differences, we could select items
upon which children from the various socioeconomic levels would per-
form equally well but, surely, many arguments could be advanced to
the effect that this would not give a correct picture of the relative in-
telligence of the various groups Thus, whereas it is evident that current
tests do not give a valid measure of the intelligence of children with ex-
tremely poor or extremely good background, the extent of the adjustment
that could be made to narrow down this difference before discrimination
in the opposite direction sets in is difficult to establish Kingsley and
Garry [212], for instance, point out that this discrimination resulting from

the nature of the content of the tests is probably not as important a factor of bias against children of lower socioeconomic status as are differences in motivation and personality Should we, while we are at it make adjustments in these areas also? Others have questioned the validity of making such adjustments Stroud [373] is of the opinion that "it makes no sense to say he is intelligent despite our inabilities to detect it, no more than to say a child who is stunted in growth is of normal size only he doesn't show it " He also suggests that the limitation of such children does not end with poor performance on intelligence tests Furthermore, as Jones [196] has pointed out the differences in IQ associated with socioeconomic status are fairly well established by the age of two or three Likewise, Lawrence [229] found a relationship between the IQ of children and the occupational status of their parents even in the case of children who have been removed from their homes in infancy and brought up in an orphanage And, of course, it is a matter of common experience, supported by such studies as that of Terman, that some gifted children come through even though born in the most intellectually impoverished environments while, on the contrary, dull children in very stimulating environments remain dull More closely related to the Davis-Eells Games, not only has Tyler [400] criticized the methodology of the study upon which they were based but Russell [316] found the Stanford-Binet gave a better prediction of reading progress in first grade than did the Davis-Eells test Likewise, Rosenblaum et al [312] found that the 'Davis-Eells Games did not "tap a hidden intellectual potential missed by other tests" and that children from the lower socioeconomic levels were lacking not in familiarity with the material but in ability to make correct associations and discriminations

Thus, the problem tends to defy solution From a practical standpoint, the school should, in view of the modern emphasis on the whole child, abandon its concept of intelligence conceived so narrowly as to relate almost exclusively to ability to do schoolwork There also might be something to gain by forgetting about intelligence as innate ability and, because of the confusion attending the term *intelligence tests*, by replacing it with such terms as *psychological tests* or tests of *scholastic aptitude* In the meantime, a certain amount of caution seems in order regarding interpretation of the results in testing the intelligence of children from different backgrounds

Use in vocational adjustment

Intelligence tests have been of considerable value in predicting vocational success, especially from the standpoint of predicting what the

testee is not likely to be successful in doing because of too little or too much intelligence Thus, a person with limited intelligence is not likely to achieve vocational success as an engineer nor is the gifted person likely to achieve success as a file clerk This is illustrated rather clearly in the graph (Fig 7 6) below showing [325] how labor turnover increases with deviations, both positive and negative, from what might be con-
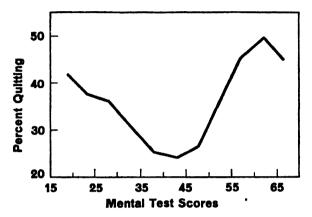
FIG 7 6 *Relations between intelligence and job turnover After Scott*
[325]

sidered an optimal ability level for maximum satisfaction in doing a given job

The role of intellectual limitations upon vocational success is particularly well illustrated in the case of the feebleminded As any person connected with the training of mentally handicapped people is fully aware, not only is their learning of whatever occupational task is involved very slow but there is also a very real level of complexity (or of simplicity) of task beyond which they cannot go Vanuxem's well-known study [403] of the difficulty of training feebleminded women to do ordinary chores is reproduced in part below to illustrate the point

Another major study of the relation of IQ to vocational success involves the tabulation of the preinduction occupational status of the draftees of World War II with respect to their scores on the Army General Classification Test [368] A study of the data in the accompanying chart reveals a steady progression in A G C T scores as occupations are ar-ranged from the professions to unskilled labor [6] These and similar findings by Simon and Levitt [340] point to a definite hierarchy in intelligence

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[6] The progression would probably have been clearer had some of the men involved had more time to attain vocational adjustment in work of their choice rather than having to take any job available while waiting for induction

TABLE 7 4

RELATION BETWEEN MENTAL AGE AND LEARNING IN
FEEBLEMINDED WOMEN *

Mental Age	Task	*Time or trials to learn*
Below 2	Fetching and carrying a single object	15 trials
2—2–11	Weeding one kind of weed	3 days
3—3–11	Gathering one kind of fruit or vegetable	3 days
	Gathering several kinds of fruit or vegetable	5 days
	Sorting and hanging clothes	5 days
	Drying and putting away dishes	17 trials
4—4–11	Simple handwashing of clothes	7 days
	Dishwashing	18 trials
5—5–11	General handwashing of clothes	8 days
	Preparing vegetables for table use	8 days
	Bedmaking	52 trials

* from Vanuxem [403]

with increase in occupational status They also show that even within a given occupational group, progress is associated with increases in intelligence and that accountants doing top level work, for instance score higher than do those whose choices are largely of a bookkeeping nature On the other hand, there are wide ranges of IQ's within any one occupational group even when the occupation is divided into different levels

RELATION TO MORAL ADJUSTMENT

Intelligence is also related to social and moral adjustment although, since after all adjustment is more a matter of the satisfaction of one's needs than of mental alertness, the relationship is far from being perfect Nevertheless, Terman, for instance, found that 85 percent of his gifted children scored above the average of an unselected group in tests of moral knowledge and conduct, and Hartshorne and May found a correlation of 50 between scores in intelligence and honesty

Delinquency tends to be somewhat more prevalent among children of below average IQ but this might be partially explained on the basis of the greater ability of brighter children to avoid detection or of the greater likelihood that they will have, more influential parents who can get them out of the hands of the law when they get caught It is also true that not only can bright children foresee consequences more clearly, but they generally find it easier than dull children to satisfy their needs
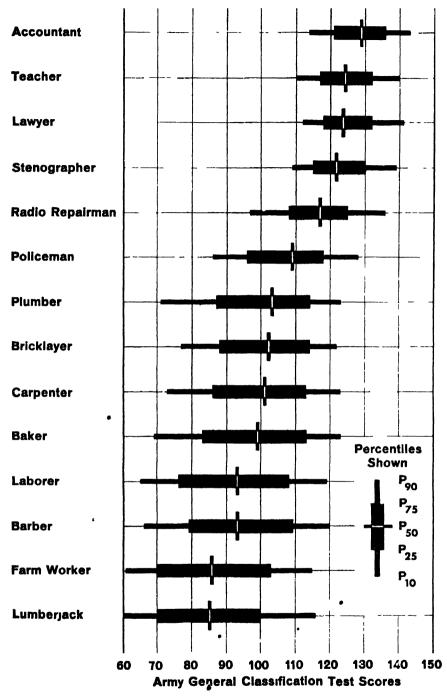
FIG 7 7 *Army General Classification Test Scores of enlistees grouped by occupations After Stewart.[368]*

through the more usual channels of socially acceptable behavior The dull child, for example, is more likely to encounter frustration at school than is the child somewhat above average Furthermore, whereas bright children tend to come from homes whose sense of values and conduct are generally in harmony with those of society in general, duller children often come from homes whose moral and social code is in direct conflict with that of society

EVALUATION OF INTELLIGENCE TESTS

The previous discussion suggests that, despite their weaknesses, intelligence tests serve a very definite function, particularly with respect to the work of the school Certainly they are not magic nor do they give foolproof answers to all the questions relating to ability, but there is considerable empirical as well as theoretical evidence to the effect that they are able to determine present status and to predict future success with much better than chance likelihood of being right

They are, on the other hand, subject to a number of limitations and, in order to avoid their misuse, it is necessary that these limitations be clearly understood by those who make use of the results What they measure, for example, is a controversial matter and when we say that a person is lacking in intelligence, it is not quite clear what it is that he is lacking in There are indications that they are essentially oriented toward the prediction of scholastic success and they may undermeasure children who, because of cultural differences or academic difficulty, do not do too well in school This may lead to incorrect expectations from such children and result in harm to them Furthermore, the IQ is only relatively constant, as we shall see, which complicates the problem of using it effectively, it tells us only what the child might be able to do provided conditions remain the same, but our predictions could be in considerable error under a different set of conditions

It is also obvious that intelligence tests measure only one of the factors that is involved in school performance and school success They make no pretense, for example, at measuring such things as motivation, emotional health, habits of work, experiential background, and other contributors to success They tell us only what the person could do, not what he will do, and certainly the human personality is far too complex to be characterized by a single index score

Nevertheless, they are indispensable as scientific tools in the hands of the teacher or administrator who knows how to use them properly, i e , who uses them for the purpose for which they were designed and interprets the results with caution and in relation to other aspects of the whole

child When used in this way, they form the basis for dealing with the child at his own level and for determining what can be expected from him The school's primary concern is to help the child make the most of his capacity intelligence tests are, undoubtedly, the best indicators currently available of said capacity

Constancy of the IQ

The problem of the constancy of the IQ is one that has received a great deal of attention from psychologists, for its very usefulness rests upon the assumption that it will remain reasonably constant over the years That such constancy of the IQ exists for the majority of individuals is attested by the relative success of the programs of educational and vocational guidance in operation today Whereas there is considerable theoretical as well as empirical evidence to indicate that such constancy is not absolute, the dull child generally becomes the dull adult, the gifted child, the gifted adult [7] This does not imply that if a determined effort were to be made, considerable change in the IQ could not be effected, although, despite the results of Schmidt s study previously mentioned, there would be a limit to the extent a person of inferior intelligence could be made into a "genius"

Actually, there is considerable data available in the literature that point to sizable IQ changes occurring over a period of years Thus, Bayley [25] found the IQ to be far from constant and Honzig [181] found that between the ages of six and eighteen, 60 percent of the group changed 15 or more IQ points and 9 percent actually changed 30 or more IQ points The same lack of consistency of the IQ over the years is evident in the correlations shown in Table 7 5 [90] of the IQ's at different ages with those at age sixteen It is, of course, not surprising that the IQ should not remain exactly constant over the years, since fluctuations can be expected to occur for a number of reasons including the unreliability of the test, administrative factors such as fatigue and lack of cooperation on the part of the testee, practice effects or growth factors occurring from one test to the other, and difference in the content of the tests in relation to the various abilities of the testee The latter is of particular importance when the results of childhood tests with their emphasis on

[7] Reference is sometimes made to Scott and Darwin to substantiate claims of alleged shifts over the years in the mental caliber of a given individual Actually, neither did exceptionally well in school but a study of their childhood accomplishments certainly refutes any notion of their qualifying as childhood morons turned adult geniuses

TABLE 7 5

CORRLLAIION OF IQ's AI DIFFERENT AGES
WIIH THOSE OBIAINED AT AGL 16 *

Age	Boys	Girls
7	58	54
8	64	58
9	58	53
10	74	70
11	75	73
12	79	78
13	78	81
14	83	82
15	90	91

fro Dcirboin ct il

sensoiimotor tasks aie being compared with those of later tests where
the emphasis is on abstract ieasoning

A good part of the fluctuations occurring in the IQ stem from the
fact that no test is completely ieliable Thus, on most tests (if we assume
no gain from test to retest to occur as a result of such factois as practice
effects) we would expect one-thud of the testees to gain from zero to five
IQ points and another thud to lose fiom zero to five points Anothei
14 percent would lose from 5 to 10 points while another 1 I percent would
gain fiom 5 to 10 points and the other two percent at cich end would
gain or lose moie than 10 IQ points These fluctuations can be expected
on the basis of chance alone and have nothing whatsoever to do with
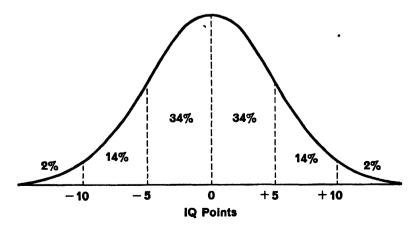
FIG 7 8 *Theoretical distiibution of changes in IQ upon retest due to
test unreliabuity*

any change occurring as a result of an increased or decreased rate of intellectual growth It simply reflects the kind of fluctuations to be expected if a number of people were to measure the length between two holes on a golf course, the length would be fixed but the estimates would be subject to error as a result of the limitations of the measuring stick and the carelessness of the measurer And, of course, a third set of variable errors is introduced when measuring IQ over those to be expected in measuring distance, namely, fluctuations within the testee arising out of fatigue, loss of motivation, emotional blocks, difference in susceptibility to distraction, and other personal factors It is also possible that mental growth, just like physical growth, goes by spurts and stops

In addition, directional shifts in IQ may result from exposure to special environmental influences Thus, since most IQ tests include vocabulary questions, one might raise his IQ if he were to be subjected to intensive vocabulary drill, or if he were to find himself in an environment where an extensive vocabulary was in constant use Whether such directional shifts in IQ actually represent a shift in intelligence or just an invalidating of the norms of the test is the crucial question around which the whole controversy of the constancy of the IQ revolves Thus, to use an extreme example, coaching on the items of the test would certainly result in an increased IQ but would not imply a corresponding increase in intelligence [8]

The problem of the constancy of the IQ is directly related to the relative influence of heredity and environment upon intelligence If heredity were the sole determinant of intelligence, the limits of intelligence would be set at conception and the IQ fluctuations would be restricted to those arising out of the unreliability of the test and the irregularities connected with the spurts and stops of the mental growth curve If, on the other hand, intelligence is relatively susceptible to the influence of the environment, additional fluctuations in the IQ from test to test can be expected as a result of actual changes in the intelligence of the individual

The relative influence of heredity and environment upon intelligence has been the topic of considerable investigation over the last half century Actually the problem is incapable of solution since studies do not touch upon the problem of heredity and environment but simply upon the susceptibility of the content of a particular test to environmental influences The difficulty stems from our inability to measure intelligence except indirectly through performance which incorporates both an inherited and a learned component so closely entwined that the rela-

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[8] This is of course, related to the question of the age at which mental growth ceases, which we have previously discussed

tive influence of heredity and environment in making this performance possible cannot be separated Neveitheless, the importance of the problem from the standpoint of its scientific and educational implications is such as to deserve the consideration of prospective teachers and we shall devote the next section to this topic

Role of Heredity and Environment in Intelligence

RESEARCH EVIDENCE

The research on the relative role of heredity and environment in producing the differences in IQ we note among people is voluminous so the discussion will be restricted to a few key or typical studies that will serve to highlight the problem and to point to some of the obstacles interfering with its solution In most of these studies the results are fairly definite but the interpretation is anything but clear and it is not uncommon to have a given set of data given diametrically opposite interpretations

The evidence on the subject divides itself into three relatively separate categories and the discussion will be centered around this breakdown

[a] Studies of the intelligence of members of a given family provide obvious proof that "like begets like" An early study by Woods [425] pointed to the fact that intelligence tended to run in certain lines of the royal families of Europe and be relatively lacking in others, and also that the heir to the throne did not appear superior in intelligence to his siblings despite the special training he had received In this country, the study of the Jukes [100, 111] revealed a heavy concentration of petty thieves, prostitutes, and feebleminded or insane individuals among some 3500 descendants of an early New England settler Better studies from the standpoint of scientific control, were the study of the Kallikaks [139] and of the Edwards family [422] In the former, for example, only 46 out of the 480 descendants of the son Kallikak fathered through a feebleminded girl were judged to be normal, wheicas the descendants of his regular family were all essentially normal In the lattei case, Edwards through his first wife sired a line of eminent men and women (out of 1394 descendants traced, there were 13 college presidents, 295 college graduates, 65 college professors, 100 clergymen, 30 judges, 3 congressmen, 2 senators, and one vice-president of the United States) whereas his second marriage produced no one of any note

Similar evidence of family resemblance in intelligence is to be found among any noted group Thus, Galton [125], found that, for every 100 Fellows of the Royal Society, there were 28 notable fathers, 36 notable brothers, 20 notable grandfathers, and 40 notable uncles In the same way, for every fifteen of Terman's gifted children, there was at least one relative in the Hall of Fame Included among the relatives of these gifted children were six signers of the Declaration of Independence, two presidents and two vice-presidents of the United States, four generals, six writers, two inventors, four statesmen, three artists, as well as a number who were listed in *Who's Who* and various other national biographical indexes On the other hand, these children, as a group, had certain advantages from the standpoint of environment one-quarter of them, for example, had at least one parent with a college degree, and the homes from which they came were rated especially high on the item of parental supervision

[b] Foster children tend to gain in IQ when adopted into good homes The Chicago study by Freeman et al [123] revealed that children with low IQ's when tested before adoption had made an average gain of some 7 5 IQ points when tested some years later and that the children adopted at an early age had made twice the gains of the group that was adopted later Burks [50], on the basis of a similar study in California, concluded that some 75 percent of the IQ differences among individuals was accounted for by heredity and estimated that the maximum contribution of the best (or the worst) environment to the IQ was some 20 IQ points

In direct contradiction to this viewpoint were the Iowa studies [346, 414] which pointed to great improvement in IQ as a result of environmental changes In one study [348], children (mostly of unmarried mothers) placed at the average age of three months were tested at ages two, four, and seven, and thirteen and found to average in the 110's in IQ despite the fact that the average IQ of the mothers tested was 88 and that of the fathers was estimated on the basis of their low occupational status to be below 100 In other Iowa studies, children placed from the orphanage in a home for feebleminded women or in a nursery school made very substantial gains in IQ while those children who remained in the orphanage suffered sizable losses In Schmidt's study, for example, gains of 30 or more IQ points were registered in a period of six years by over half of the 195 subnormal children involved Along the same lines are Gordon's well-known studies [151] in which he found the 12-year-old children in gypsy and canal-boat communities to score some 20 points less in IQ than did their six-year-old siblings These findings have been

corroborated in a number of investigations of American mountain children [14, 106]

The interpretation of these studies is a matter of controversy Certainly, flaws can be noted in the Iowa studies and many articles have been written [215, 251, 341, 423] criticizing various aspects of their methodology and conclusions but, probably most damaging is the fact that careful studies carried out by other investigators have failed to duplicate their results For instance, questions can be raised about the validity of the tests upon which the gains or losses were computed In the study described above, the mothers averaged an IQ of 88 but it is doubtful if the emotional state of the unmarried mothers at the time of admission would be conducive to the obtaining of a true IQ and the fact that an undue share of the true fathers were working at the unskilled and semi-skilled level may simply reflect the fact that they were young and as yet vocationally unsettled rather than that they were dull In the nursery school study, it is quite possible that some of the activities covered in school were quite similar to those measured on the intelligence test However, probably the most important single factor to consider in connection with these studies is that of cooperation by the children Young children get very negative, particularly when treated in an impersonal manner as might occur in an orphanage, and very often refuse to do things or to answer questions even when they can This would have a direct bearing on their scores in an intelligence test in Mayer's study [255], for example, 75 percent of the children from ages two-and-a-half to four-and-a-half showed negativism on the Stanford-Binet, and whereas only 25 percent of the negativism could be handled by a competent psychometrist at age two, 90 percent was overcome at age five-and-a-half Rust [317] found that lessened resistance enabled certain children to pass on later presentation 58 percent of the items they had refused (even though no help had been given in the interim) with a resulting gain of as much as 35 IQ points McHugh [248] found essentially similar results It is also pertinent to point out that orphanage children have been found by Moore [270] to be markedly retarded in language development, even after adjustment for chronological and mental age, (perhaps due to lack of association with adults) and that Dawe [88] was able to raise by some 15 points the IQ of orphanage children by giving them some fifty hours of training in the use of language Still another point to be raised in connection with the gains reported in the Iowa studies is the question of the standardization of the tests used on young children it is quite possible that, since parents, of high socioeconomic status are more likely to cooperate in projects of this kind, tests of very young children have

been standardized on an above-average group with the result that a
given child's score on a test by comparison with this superior group
would be relatively less impressive than his score on a later test when
he is compared with a more normal group Likewise, the Gordon studies
are open to the criticism that the tests used were not valid for these
children who had reached school age but did not attend school regularly
As previously discussed, current tests of intelligence are loaded with
academic skills, a fact which is not necessarily objectionable when deal-
ing with the average child In the case of children whose attendance
at school has been regular, for one to know that 9 from 25 leaves 16
while another does not may be assumed to imply that the former is
brighter than the latter But this assumption does not hold when children
differ in school attendance Thus, the six-year-olds of the gypsy or
canal-boat communities would not be too highly penalized because the
children with whom they would be compared had not attended school
either so that the material would be relatively fair for all six-year-olds
But, at age twelve, the children who had been in regular attendance at
school would have an obvious advantage over the canal-boat or the
gypsy children who were relatively lacking in opportunity—perhaps
rather than ability—to learn the material of the test

Another aspect concerning intelligence tests which is of interest here
although it does not have a direct bearing on the problem of IQ increases
is their almost complete undependability when administered to very
young children As pointed out by Goodenough [148], no study has shown
more than a moderate relationship between the tests given before
age six and those administered in later childhood or at maturity This is
evident in the correlation between the IQ obtained at various ages and
those obtained at age six as reported by Bayley [26] (see Table 7 6)

TABLE 7 6

STABILITY OF THE IQ AT VARIOUS AGES *

Age in months	r with IQ at age 6
2 months	— 13
5 months	— 07
8 months	02
11 months	20
14 months	30
21 months	50
30 months	70
48 months	82

from Bayley [26]

A number of similar correlations were obtained and noted by Honzig [182].

> From test at age 2 to retest at age 5, $r = 32$
> From test at age 5 to retest at age 8, $r = 70$
> From test at age 9 to retest at age 12-13, $r = 85$

It is interesting to note that the fact that negative correlations are found between the IQ of an infant and his IQ a few years later has been corroborated by a number of investigators As pointed out by Jones [196] it is not till twelve months of age that this correlation reaches zero and then begins to become positive In fact, perusal of the correlations just cited suggests that it is not till the fourth year that any degree of stability in the IQ is attained, for the first year, at least, it seems logical to suspect that a better indication of the infant's subsequent IQ can be obtained by testing his parents than by testing him It should be repeated, however, that the low correlations discussed here reflect random errors (which tend to cancel out and not to lead to over-all gain or loss in IQ) and that they do not bear directly upon any studies in which *gains* in IQ have been reported

[c] Probably the most conclusive evidence of the relative role of heredity and environment in the area of intelligence comes from studying the IQ of twins Early investigators, notably Galton [125] and Thorndike [385], were led by the slight difference in IQ which they found between identical twins by comparison with those between fraternal twins to take a rather strong hereditarian position Thorndike, for example, concluded that heredity was by far the more potent of the two sets of factors, when—and this is important—the environmental differences involved are no greater than would be found in the same community and the same cultural group This is a fundamental distinction it is no longer a matter of what differences in environment could do in producing changes in a person's IQ, but rather what it can be expected to do under the usual conditions of people living in the same community, attending the same school, and generally being influenced by the same set of factors, although not necessarily to the same degree

All studies comparing the IQ differences among twins and siblings are agreed that the closer the blood relation between two persons the smaller the difference between their IQ tends to be Thus, Merriman [262] found the correlation between the IQ's of unlike sex twins (which would have to be fraternal) to average somewhat below 70 whereas the correlation of the IQ of like sex pairs (which would include all identicals and like sex fraternals) was 90 Similarly, Wingfield [420] found correlations in 102 sets of twins and a number of other children who had

spent a good part of their lives in the same orphanage to decrease with decreasing degrees of blood relationship The data are shown here En-

TABLE 7 7

CORRELATION OF IQ's WITH VARIOUS DEGREES OF
BLOOD RELATIONSHIP *

Family Relationship	r
identical twins	90
like-sex twins	82
fratenal twins	70
unlike sex twins	59
siblings	50
cousins	27

from Wingfield [420]

vironment, of course, also plays a part as can be seen from the fact that unlike-sex fraternals differ to a greater extent than do all fraternals put together

The classic study in this area, which was conducted by Newman, Freeman, and Holzinger [280] in the early 1930's, is that of nineteen pairs of identical twins separated shortly after birth The correlations between the IQ's and other traits of the identical twins are shown in the following table along with the corresponding correlations for identicals and fraternals living together acting as controls The data in Table 7 8 show great

TABLF 7 8

CORRELATION AMONG VARIOUS TRAITS OF IDENTICAL TWINS
SEPARATED AT AN EARLY AGE *

Trait	Identicals together	Fraternals together	Identicals separated
Standing height	981	934	969
Weight	973	900	886
Binet IQ	910	640	670
Otis IQ	922	921 .	727
Academic achievement	955	883	507
Personality	. 562	371	583

* from Newman et al [280]

similarities among the various traits of the identical twins separated at an early age, particularly in the area of physical characteristics The correlation in IQ is also rather high considering the academic slant of the intelligence tests and the wide differences in schooling of some of the twins

Thus, whereas the average difference for the nineteen pairs was about
8 IQ points, one pair, Gladys and Helen, had a difference of 24 IQ points,
but they also had a difference of thirteen years in formal schooling Simi-
larly, the other large differences in the IQ's of any twin pair tended to be
associated with sizable differences in formal education The authors
concluded that when differences in environment are small, heredity seems
to be the determining factor in influencing the individual's IQ, when,
on the other hand, wide environmental differences are involved, en-
vironmental influences become progressively more important in producing
IQ differences

A relatively large number of studies have been considered in the
preceding pages (and a number of others could have been cited) [*] but
the problem is still the subject of controversy Many of the studies cited
in the literature have basic flaws in design which complicate their inter-
pretation some, for example, revolve around what might be considered
a plain violation of the basic principles of good testing All of them run
into difficulty in connection with the fact so aptly stated by Cattell [59]
that experimenters on this topic argue in a circle, first including environ-
mental skills into their tests and then proving that environment affects
test performance and obtaining results in direct proportion to the con-
tamination of their instruments Even in the results of the Newman,
Freeman, and Holzinger study, which is probably the most conclusive,
one could argue that the 24 point differential in the IQ's of Gladys and
Helen is completely meaningless in view of the fact that one was a
teacher with a college degree while the other had had two years of formal
education—or at least, that this was a difference in IQ rather than in
intelligence The general consensus is that in the usual situation where
children live in the same community, attend the same schools, and gen-
erally have the same social and cultural background, heredity is likely
to be more important than environment in determining their intellectual
level Thus, most psychologists who have made a study of the evidence
[241, 336, 337] estimate that, under normal conditions, heredity accounts
for up to three-quarters of the individual differences in intelligence while
environment accounts for up to one-fifth with the remainder being at-

* We may, for example, reason from analogy that, just as musical aptitude is pos-
sibly an inherited trait so intelligence which is essentially a combination of verbal
and numerical aptitude may be Of course, musical performance depends on en-
vironmental opportunity and, had Mozart been born in the wilderness of Africa, he
might have beat the best set of tom-toms but probably would not have attained the
fame he did On the other hand, many people with unlimited opportunities and,
apparently, no lack of desire never become adequate musicians

tributed to chance or accidental conditions The general consensus of modern psychologists on the problem is very well stated by Boynton [38], who points out that although research evidence does not justify unequivocal individual predictions, it does "indicate a very significant tendency for persons to maintain the same relative IQ ranks over a long periods of years" He further points out that "   ordinary changes in environment are not likely to produce much variation in the IQ and it is not easy to plan a program which will result in a material and permanent change in the IQ of a child' A similar opinion is expressed by Goodenough [148] "   the weight of the evidence when all of the large number of investigations reported   is taken into account certainly does not support the view that the intellectual development of children is as readily modified by experience as many wishful thinkers would like to believe"

The environmentalist position is perhaps more glamorous and more in line with some of our cherished democratic values while by contrast the hereditarian position appears snobbish and suggestive of an intellectual caste system [10] Actually, rigid support of either of these extreme positions does not appear warranted in view of the inconclusiveness of the data Furthermore, it can be harmful for a teacher to neglect a child on the argument that there is no point in giving him any help, since—considering who his parents are—he could not profit from it anyway, is a violation of trust On the other hand, an extreme environmental position can also be harmful in that it can create false hopes on the part of the parents who are only too eager to be convinced that their youngster will do better next year It can also lead to terrific pressures being applied on the child on the assumption that he can do it "if he only wants to

Caution must be exercised in interpreting intelligence test scores A child's IQ is supposed to reflect his intellectual level and it does this rather well in the case of the majority of children but it must be remembered that an IQ is valid to the extent—and only to the extent—to which the background of the testee is comparable to the background of the group upon which the test was standardized Thus, any change in IQ does not necessarily represent a corresponding change in intelligence and great care must be taken in interpreting the IQ of children whose background is different from the average

Nevertheless, all studies point to the fact that environment is going

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[10] Pistore (61) found a definite relationship between support of the environmental or hereditarian position and the liberalism–conservatism continuum in socio-political outlook

to help at least a little, if not a great deal, and we, as teachers, should make a point of providing the child with as stimulating an environment as possible in order to help him accomplish the most with what he has It is obvious that great improvement in effective behavior can be brought about by education even though these improvements may not be accompanied by an increase in intelligence The greatest service the teacher can do the child in connection with intelligence is to work in the areas of motivation, removal of emotional blocks and remediable academic deficiencies, so that the child can use effectively whatever intelligence he possesses, and to help him accept himself at his own level Parents and teacher need to be cautioned against applying pressures on the child to make him perform like a genius, which he was never intended to be This is an area in which parents and teachers can easily get emotional to the detriment of the child whereas parents are willing to accept the fact that musical aptitude is largely inherited and not to be overly concerned if their child is dropped or failed in orchestra, they immediately feel it a reflection on them if their child is lacking in scholastic aptitude In the same way, many teachers who are willing to accept the fact that John cannot run as fast as Tom appear unwilling to concede that Dick could not do as well academically as Harry even "if he tried" The work of the teacher might be facilitated, at least in some respects, if every student were above average but, since this is never going to be the case, the sooner he accepts the fact that there are limitations in intelligence as in every other field, the better he will be in helping children attain their maximum growth

HIGHLIGHTS OF THE CHAPTER

The emphasis on the learning of academic material in the classroom makes the subject of the intellectual growth of the child of primary concern to the teacher This chapter considered some of the major aspects of intellectual growth as it relates to the work of the classroom

[a] There is considerable disagreement among psychologists as to a definition of intelligence as well as to its nature and its constituents This lack of agreement poses a problem in connection with establishment of the validity of such tests

[b] Mental development is characterized by such aspects of intellectual growth as an increase in the use of language and other symbols and in the ability to remember, to concentrate, and to reason

[c] Concepts basic to understanding of intelligence include that of

mental age which refers to the *level* and the IQ which refers to the *rate* of one's mental development

[d] Mental growth tends to be relatively constant for the first thirteen years of life, then tapers off, eventually reaching a peak in the middle twenties, and finally, undergoes a gradual decline The age at which mental growth reaches its peak is a matter incapable of solution because of the inseparability of experience from intelligence, which results from the fact that intelligence can be measured only indirectly through performance on tasks requiring intelligent behavior

[e] The IQ follows a normal distribution with 100 accepted as the average and some two-thirds of American-born whites with IQ's falling into the range from 84 to 116

[f] Intelligence tests are particularly useful in connection with the work of the school—and especially in setting classroom experiences at the level of the child's insight, in determining what can be expected of him, and in predicting his likely future academic success

[g] The IQ is relatively constant under the usual environmental conditions confronting the average child as he lives in the same community, attends the same school, and generally undergoes the same type of experiences When great changes in environmental conditions are responsible for correspondingly great changes in IQ, one can generally question whether one or the other of the obtained IQ's is a valid measure of the person's true intelligence

[h] The constancy of the IQ is generally discussed as part of the problem on the relative role of heredity and environment upon intelligence In view of the controversial nature of the evidence, neither a strong hereditarian nor a strong environmentalist position is warranted from a scientific, nor a psychological or educational point of view

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QUESTIONS AND PROJECTS

1 Insofar as it is known, what is the physioneurological basis of intelligence? What research has been done in this area?

2 Evaluate (a) The evidence on the constancy of the IQ bears a direct relationship to the constancy of the environment and to the susceptibility of the test items to environmental influences and only an indirect relationship to the constancy of the individual's intelligence (b) The level of intelligence bears a definite relationship to racial, national, and geographic variables

3 What are the sociological implications of the fact that people from the lower socioeconomic classes reproduce at a higher rate than people from the middle and upper classes? Is this objectionable and, if so, what steps within the framework of democratic society might be taken to balance the situation? Is there any real evidence of the national IQ declining?

4 Make a list of some of the better known tests of intelligence Check in the Mental Measurement Yearbooks and in the periodical literature for an evaluation of these instruments

5 How specific should a teacher or counselor be in telling the child (or his parents) his IQ? What are the dangers involved?

8

General Nature of Learning

THE TOPIC OF LEARNING has always been of immediate interest to teachers concerned with teaching the child the facts and skills incorporated into the curriculum It becomes of even greater interest to the modern teacher concerned with the all-round growth of the child for learning applies just as surely to emotions, personal and social adjustment, and other aspects of behavior as it does to the multiplication table The individual reacts as a unified and integrated whole and the orientation of the present chapter toward the learning of academic material principally in the classroom constitutes, therefore, an artificial segmentation of behavior justifiable only for the purpose of discussion It must also be noted that learning is affected by the various aspects of the total personality in the total environment and that whatever generalizations are reached on the subject must be considered in the light of the usual "other things being equal Teachers, if they are to fulfill their obligations of guiding the growth of their pupils toward desirable goals, must be familiar with the principles on the basis of which desirable changes in behavior can be brought about

Nature of Learning

To the layman, the nature of learning is clear learning simply refers to the acquisition of knowledge and skills The psychologist, on the other hand, is far less sure He can immediately reject the layman's definition given above as naive and as generally reflecting the viewpoint of philosophers at the turn of the century that the mind is a blank and that it is, therefore, the educator's task to fill this empty container with useful material Learning involves much more than that, even though, judging from their emphasis on drill and parrot-like reproduction of information on examinations, one might suspect that some teachers still view learning as the acquisition of facts and skills The modern psychologist, whose concern is with behavior and not with useless information, can find no value in "filling the bowl with learnings" unless those learnings are translated into action

One of the earlier attempts to explain learning from a psychological point of view was in terms of the lowering with exercise of resistance to the passage of a neural impulse from receptor to effector This view had to be abandoned when research [121] showed that there is more to learning than simply a telephonic-type connection between a given receptor and a given effector Actually, there seems to be no question but that there must be some neural basis for learning but, to date, psychologists have not been able to discover what neurophysiological changes are involved when a person learns Research has suggested, although the evidence is not conclusive, that learning capacity is related to the mass of the brain, since destroying part of the brain of a rat tends to destroy his ability to learn in proportion to the amount of brain destroyed It also appears that the idiot has a smaller number of developed neurones than does a normal person To the psychologist, however, whose interest in physiology or neurology is only secondary, a behavioral definition is more profitable from a functional point of view Thus modern definitions of learning are invariably in terms of behavior changes resulting from experience McConnell [130], for instance, defines learning as the

> · progressive change in behavior which is associated, on the one hand, with successive presentation of a situation and, on the other, with repeated efforts of the individual to react to it effectively

The word *change* in the above definition warrants elaboration Throughout life, one thing is inevitable—change Changes, as we have seen, result from both maturation and learning, with the two so closely interrelated that their influence cannot be separated Learning refers to those changes which take place as a result of special stimulation and does not take in to consideration the changes associated with the maturation of inherited structure and predispositions, nor does it apply to such changes in the effectiveness of the individual's reactions to stimulation as might be associated with fatigue or drugs

Learning is sometimes defined in terms of an *improvement* in behavior, rather than just a change Technically, this is correct but care must be taken not to interpret the word *improvement* in the moralistic sense or in the sense of this change being in the individual's best interest All that is implied in the word *improvement* is that the person gets better at whatever he is learning to do Thus, one can *learn* to become a pickpocket or *learn* a bad habit in the sense that, as he learns, his behavior becomes more efficient, more smooth, more precise, more probable, and more direct with respect to the goal—but it may not be *better* from an objective point of view

The simplest case of learning is that of the conditioned response, as was discussed in connection with the conditioning of tear in Chapter 5 As two independent S–R bonds are presented simultaneously, the stimulus of the weaker of the two bonds becomes associated with the response of the stronger bond so that it alone becomes sufficient to elicit the response Thus, in Watson's study, as a result of the introduction of a loud noise just as the child was about to touch the rabbit, the response of fear became "conditioned" to the rabbit

Conditioning is of special importance in the development of attitudes and the teacher needs to be particularly alert to the attitudes which develop as by-products of the various experiences which the child undergoes in the classroom, for no phase of education is of greater significance from the standpoint of the welfare of society and of the individual But conditioning is not adequate to explain the process involving utilization of past experience in acquisition of the more complicated forms of learning In everyday situations, for instance, the learner does not react to a single stimulus but rather to a complex situation involving the interaction of a multitude of factors from which he must first disentangle the relevant aspects and then organize these various components into a new meaningful whole Thus, involved in such learnings as the grasping of the meaning of democracy or the playing of baseball are two complementary

processes, namely, differentiation and integration, i e , a breakdown of
the total performance into its components and a reorganization of the
parts into a new pattern [1] This is particularly evident in the acquisition of
a skill—the young child learning to write or the adult learning to play
golf must first master the individual movements and then put them back
together into an integrated performance—but the same processes are
involved in the case of ideational learnings, e g , the history of the second
world war, where a complete understanding would call for a back-and-
forth movement between differentiation and integration Hence, the
changes taking place during the learning are rarely sudden, immediate,
and complete, but are rather developmental processes which might
extend over a considerable period of time It should also be noted that
it is the learner who must do his own differentiating and integrating
Whereas the teacher might point out various components and their rela-
tionship to each other and to the learner's previous experiences, it is the
learner who, in the final analysis, must *discover* the parts and the relation-
ships and fit the individual responses of a complex pattern of response
into the system to which they belong

Steps in the Learning Process

Learning has always been of primary concern to psychologists Yet
despite the large amount of theoretical and empirical data available on
the subject, there is still considerable disagreement as to the various
aspects of the learning process and considerable variation in the tech-
nical terms used by different psychologists to label and describe them
These differences may be rather frustrating to the beginning student in-
terested in the finer points of the theory of learning, but fortunately there
is almost universal agreement on the concepts with which an introduc-
tory course in educational psychology needs to be concerned Thus,
most psychologists subscribe to the view that learning takes place as a
result of the total individual's attempt to satisfy the multiple motives and
purposes which affect him Likewise, although there is some variation in
the fineness of the breakdown, there is almost complete agreement on
the essential elements and the steps of the learning process

Probably the simplest statement of the essential aspects of learning
is that of Miller and Dollard [268] "This may be expressed in a homely
way by saying that, in order to learn, one must want something, notice

[1] Generalization, i e , the fitting in of individual responses into the complex system
to which they belong, is an aspect of integration

something, do something, and get something " A somewhat more detailed representation is that of Dashiell [83], shown diagrammatically in Figure 8 1 The motivated individual [1] encounters an obstacle [2] that prevents the attainment of his goal and the satisfaction of his motives He
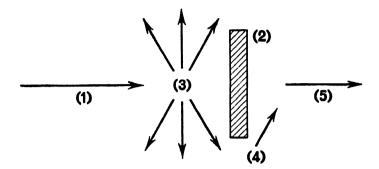
Fig 8 1 *Diagram of cardinal features in readjustment behavior After Dashiell* [83]

makes exploratory responses [3] until some response [4] gets around the obstacle to the goal [5] The discussion of the learning process in this text will be based on the following steps

Motivation Learning takes place as a result of response to stimulation Unless the individual has some unsatisfied need or drive which makes him receptive to stimulation and causes him to act in an attempt to reduce the tension associated with this unsatisfied need, no learning will take place Actually, the individual has many needs and purposes, only a few of which he can attend to and the direction of the learning that will take place will depend on the relative strength of the motives in relation to the nature of the situation in which he finds himself

Goal The motivated individual orients himself toward a goal which his past experience leads him to believe—consciously or unconsciously— will be effective from the standpoint of his motives Behavior does not just occur it is caused by some need and is oriented toward a goal—or, as psychologists say, it is purposive Even at an early age, the child in need of water directs his behavior toward those aspects of his environment which will satisfy his thirst A considerable amount of the teacher's time and energy is spent in setting up goals, e g , rewards of various kinds, toward which the child is to strive, but those goals will be effective only to the extent that they become the child's goals, for if they don t, his behavior will be directed toward goals of his own and toward circumventing those of the teacher

Readiness We must assume that the individual is basically capable

of satisfying his needs, thus, the premature infant whose physiological growth has not progressed to the point of his being able to take in food cannot learn to do so In the case of most learnings, readiness implies a combination of maturation and learning, or, in other words, depends not only on inherited structure but also on training and experience Actually, readiness in its broadest sense is a complex concept covering a wide variety of factors which, for the sake of discussion, may be classified as follows

[1] *Physiological factors* Learning cannot take place unless there is a sufficient degree of maturation of the sense organs, the central nervous system, the muscles, the glands, and the other physiological equipment involved

[2] *Psychological factors* The individual, to be effective in his learning, must have the proper motivation, a positive self-concept, and a relative freedom from devastating emotional conflicts and other psychological impediments that preclude learning

[3] *Experiential background* With the exception of the learning which stems from inborn response tendencies, learning can take place only on the basis of previously learned skills, concepts, and information

It must be pointed out that, since the individual reacts as a whole, strengths and limitations in any one of the three sets of factors listed above will affect the whole process of learning Thus, strong motivation will compensate to some extent for limited ability just as negative attitudes may prevent learning from taking place despite adequacy of the other factors

This matter of readiness is, of course, one of great concern to the curriculum maker Unless the curriculum is adjusted to the developmental level of the learner, the likelihood of his learning its contents is relatively small and that of his learning such negative attitudes as disinterest or defeatism correspondingly great It might be emphasized that readiness implies not only having the learner capable of absorbing the material but also the complementary and often overlooked aspect of having the material of sufficient difficulty by comparison with the readiness of the child as to challenge him Hence, the teacher needs to go to considerable effort to see that the demands of the curriculum are in line with the readiness of the child He can do this through (a) manipulating the curriculum, i e , moving the presentation of a given concept or skill from one grade level to another (b) adapting the method of presentation to the readiness level of the child, and (c) increasing the readiness of the child through developmental exercises

Training in advance of adequate maturation is relatively futile and can be harmful However, readiness implies more than maturation and it is important to realize that the nonmaturational aspects of readiness—experience, motivation, attitudes—are amenable to training and that, therefore, just as in the case of Jimmy and Johnny, it is possible to make the child ready for a given learning experience much earlier than he would be normally if left to his own devices He can also be made ready for a given learning experience by adapting the method of presenting material to his level of readiness Thus, as we have seen in Chapter 3, whereas we generally feel that a mental age of 6-6 is necessary for the child to learn to read according to present procedures, Gates [130] found that children with a mental age of five could be made to reach essentially the same standard of reading proficiency as is normally found in the first grade in our schools, and he concluded that, within limits, there is no mental age that can be set as a minimum or optimum for beginning reading

Obstacle An obstacle arises between the motivated individual and his goal If no barrier existed, the goal would be reached according to some previously learned behavior pattern and the situation would involve no learning Thus most people motivated by thirst simply walk over to the tap, as they have always done, and satisfy their thirst If, however, the tap should give no water, the situation would afford the basis for learning The task of the teacher is to put realistic obstacles in the path of the child's goals and encourage him, with guidance when necessary, to deal effectively with the situation Thus changing the requirements of a geometry problem so that it can no longer be handled by the solution used in the example in the text will provide the child with the need to learn

The obstacle can take on a number—or even a combination—of forms Probably obstacles are most frequently social or societal in nature, as in the case where Mother's order not to touch the cookies frustrates the child's need for food, or society's taboos in connection with sex result in frustration of the sex drive Another important form of obstacle to the satisfaction of needs concerns the conflict of motives within the learner, as in the case of the boy who has need for both play and good grades but who, because his needs are incompatible, must resign himself to denying one or the other Obstacles can also be physical, e g , the shelf on which the cookies stand being too high to reach Finally, one may be prevented from attaining his goals by virtue of personal limitations such as limited intelligence or unattractive physique

Regardless of the nature of the obstacle, the individual's inability to

reach his goal will result in frustration and tension which will spur him all the more toward the attainment of this goal and the satisfaction of his needs Such tension is beneficial to the individual in that it forces him to try to find the solution to his problems, i e , *it forces him to learn* However, as we have seen in Chapter 2, when the goal is of tremendous importance to the learner and yet the obstacle is unyielding, tension may reach such proportions as to cause a rigidity and even a disorganization of behavior which will impede rather than facilitate learning

Response The individual is eventually led to action, the nature of which will depend on his interpretation of the situation he may feel that a direct attack will overcome the barrier and lead him on to his goal, or he may decide to go around the barrier or to seek a different goal His behavior, though varied, is, nevertheless, still governed by the need he is trying to satisfy

Reinforcement If his response is successful in satisfying his need, that response is reinforced and, on subsequent occasions when faced with a similar situation, the individual will tend to repeat it If, on the other hand, it is not successful in satisfying the motive that led to the behavior, the tension accompanying his unsuccessful attempts will keep him trying till he finds a response that provides satisfaction and reduces tension

Generalization The last, and certainly a most important, step of the learning process consists in integrating the successful response with the individual s previous learnings so that it becomes part of a new functional whole

Some Aspects of the Learning Process

LAWS OF LEARNING

We have noted that the exact nature of the learning process is, to some extent, the subject of theoretical controversy [2] and that psychologists have neither been able to determine the neurophysiological basis of learning nor to supply a scientific explanation of the process by which it occurs They have on the other hand, discovered a number of laws which express empirical relationships existing between certain conditions and the effectiveness of the learning that does take place Thus, Thorndike [384], as a result of his experiments with the learning of animals, postulated

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[a] McConnell (41st yrbk , N S S E) points out that the disagreements among the various schools have been greatly exaggerated and that the differences which do exist bear on the relative emphasis on the different aspects of the process and the use of different terms rather than on outright differences in basic concepts

such laws as the law of effect, of exercise, of primacy, or recency, of intensity, and others Although most of these laws no longer carry the prestige they held earlier in the century, they still bear directly upon the work of the classroom, and we shall devote the next few pages to a brief consideration of their nature

By contrast to other laws of learning which are generally considered to be of doubtful validity, the law of effect, which in simple language states that, other things being equal, those responses which are followed by satisfying aftereffects tend to be learned, is not only the most important but also the most widely accepted In fact, as pointed out by Melton [258], whether the idea is in terms of effect, reinforcement, need reduction, or purposive behavior, the concept of relating the learning or nonlearning of a response to the consequence of said response is accepted almost universally

In order to appreciate the full significance of the law of effect, it is necessary to realize that *satisfying* in the statement of the law of effect is to be interpreted from the standpoint of whether or not it enables the learner to reach his goal and, thereby, cause a reduction in the tension attendant upon the frustration of his needs If the learner sets as his goal the getting of a good grade in a course, for example, those responses that lead to the attainment of this grade will be satisfying even though they may involve hours of hard work Thus, the law of effect is closely connected with the concept of needs and of motivation, and is best understood when considered in this light

It follows logically from the previous discussion that, if effective learning is to take place, it is necessary for the learner [a] to establish as clearly and explicitly as possible the goals that he is to reach, and [b] to make a continuous evaluation of his performance in terms of the attainment of these goals as a means of getting continuous reinforcement through the law of effect It also follows that the goals which the child is expected to seek must be real goals to him, teachers often assume that the child is enthusiastic about certain goals related to schoolwork when, in reality, the goals are so unappealing to him that their attainment (or unattainment) is to him of little moment Hence, little, if any, learning takes place This point is well brought out by Skinner [347] in the following quotation

> The child at his desk, filling in his workbook, is behaving primarily to escape from the threat of a series of minor aversive events—the teacher's displeasure, the criticism or ridicule of his classmates, an ignominious showing in competition, low marks
> In this welter of aversive consequences, getting the right answer

is in itself an insignificant event, any effect of which is lost amid the anxieties, the boredom, and the aggressives which are the inevitable by-products of aversive control

To make matters worse, the teacher's goals must always compete with the multitude of goals the child already has Of course, some of these are not in the best interest, but they offer satisfaction and tend to be retained until they are superseded by something more dynamic the teacher has to offer

As first formulated, the law of effect also emphasized that non-satisfying aftereffects would tend to cause a response to be eliminated Later research led Thorndike to withdraw this negative phase of the law of effect It is still generally agreed that, in practice, punishing a wrong response will tend to cause it to drop out, but this is probably best explained on the basis of the fact that wrong responses, not succeeding in satisfying the need of the motivated organism, lead him to continue trying other approaches until he makes the correct response and is rewarded Thus, it is the rewarding of the correct response to which the learner is eventually led rather than the punishment of the wrong response that leads to learning Thorndike's later views were to the effect that, if the learner is prevented from making the right response and from having it reinforced, punishment of the wrong response will only serve to fixate it and increase the likelihood of its reoccurrence This is probably more likely in the case of meaningless material where the child has absolutely no way of knowing the correctness of his answers

There is considerable evidence to support the view that, in order to be effective, reinforcement must follow immediately upon the response Grice [156], for example, found the effectiveness of reward on the learning of rats to drop rapidly as it is delayed—even to the point of becoming completely useless Immediate reinforcement is, of course, the secret of success in training rats, pigeons, and other animals to do relatively complicated routines despite limited intelligence and, although it is dangerous to relate the results of studies made on animals to the learning of humans with their greater power of association, there are good reasons to believe that the ineffectiveness of our schools is in no small way related to the lack of provision for immediate reward or punishment This view is presented in a particularly forceful manner by Skinner, who expresses surprise that any learning takes place in the classroom considering the fact that, in the typical classroom situation, reinforcement of the child's responses is relatively infrequent and often relatively remote from the occurrence of the response Thus, in an examination situation or in the arithmetic period, the child jots down answers but he may

not know till the next day or even the next week whether his answers are right or wrong By that time, the learning opportunity has passed and the child is concerned only with the score he made [3] The law of effect and its complementary aspect of motivation are among the most impoitant concepts of education as fai as the classroom teacher is concerned The effectiveness of leu ning in and out of the classioom is in propoition to the extent to which children have accepted as theirs woithwhile goals, and the experience is rewaided through the attainment of these goals

Thorndike's laws of exercise, which was used as justification for the drill used in classrooms years ago [4] and which stemmed directly fiom his views of learning in terms of the lowering of the resistance of a synapse to the passage of a neural impulse, has been more or less disciedited Dunlap [101], for instance, was able to oveicome a tendency to type *hte* for the word *the* by deliberately practicing the incoriect response while emphasizing to himself that this was in ciror The present consensus seems to be that, while practice is a necessaiy condition for leaining, it is not a sufficient one and that the law of exeicise operates only induectly through the fact that practice permits the law of eflect to reintorce the correct responses A realization of this point has helped revolutionize school practice from emphasis on diill to emphasis on motivation and meaningfulness Thus, "practice makes perfect' only to the extent that it piovides the opportunity fon the law of eflect to opeiate Unless the child cares about the outcome of his practice, practice till doomsday will not improve his skill any moie than taking notes in eveiy class impioves a student's penmanship The futility of unmotivated diill is well illustrated by the old story of the boy made to wiite one hundied times "I have gone" in ordei to break him of the habit of saying I have went finding the teachei out of the ioom when he finished, he lelt a note, "You were out, so I have went home" [5]

Thorndike's other laws have, likewise, been abandoned His law of iecency, for instance, probably pertained to retention iathei than to leaining and his law of primacy is probably iclated to the intensity of impression On the other hand, othei concepts, even though no longei considered as *laws,* have direct educational implications Thus, ieadiness

stresses the need for adequate maturation and for preparing the child through building up the proper background and fostering the proper mind-set Likewise, the concept of belonging emphasizes the importance of meaningfulness relatedness, and integration of what is learned into a unified frame of reference

TRIAL AND ERROR VERSUS INSIGHT

When the situation in which the learner finds himself is such that his previous solutions are not adequate, he has to devise some new means of dealing with it Whether the solution comes to him suddenly after the style of Archimedes, who is said to have had the solution to a problem come to him so suddenly while taking a bath that he ran down the street completely naked shouting 'Eureka, Eureka!", or whether it comes only after a gradual and laborious process of trying this idea and that until eventually the solution evolves has been the subject of considerable discussion in professional literature, particularly between followers of the connectionist and the Gestalt schools of learning

Thorndike's experiments with the learning of animals led him to the conclusion that learning is largely the result of trial-and-error behavior He, for example, placed a hungry cat in a cage just outside of which a bowl of fish was set The cat was, of course, motivated to reach the fish and tried clawing at the gate or slipping through the bars, but the experiment was set up so that the key to his getting out lay in his pushing against a post in the center of the cage which would trip the lever on the door Thorndike found that it was only after many random trials that the cat was able to hit upon the solution and that, having hit upon it, he would repeat the performance that led to his getting out even to the point of backing into the post, if that was the way it had happened to open the door the first time Thorndike concluded that learning was essentially a trial-and-error proposition (or more correctly, trial-and-success) with little understanding involved

More recent emphasis upon insight has been largely due to the influence of supporters of the Gestalt school of psychology In a study by Kohler [219], an ape, after having tried unsuccessfully to pull a banana, just beyond his reach outside the cage, saw a stick which the experimenter had placed in the cage so that it and the banana lay in his field of vision and proceeded to use it to pull in the banana In another study, the ape was able to fit two sticks together in order to make a longer pole with which to pull in the banana It must be noted here that, whereas insight came suddenly, it didn't come immediately upon presentation of the problem, but rather it involved considerable *trial and error* Neverthe-

less, the ape was able to preceive the means-end relationships involved in the situation or, in Gestalt terminology, to *structure* the stick, the cage, and the banana into a *field* Insight implies a sudden mental reorganization and integration of the various aspects of one's previous experiences into a new pattern so that a new, but not altogether different, situation is seen in all its relationships

The word *sudden* in the above statement is rather troublesome and some psychologists question the existence of insight on the basis that, unless the situation is identical with a previous situation in the learner's experience (in which case there is no learning), there is bound to be some trial and error, although this trial and error may be mental rather than overt and physical They feel that insight is of the same nature, except in degree, as other phases of learning, and therefore requires no special treatment It must also be noted that trial and error is not simply blind, haphazard, and purposeless, groping in all directions until, quite by accident, one response is rewarded and learned in accordance with the law of effect On the contrary, unless the means-end relationships are completely obscure and illogical, the trials are very definitely oriented toward what the learner feels will lead him to his goal it is *trial and error* only as the means-end relationships of the situation are not clear to him

Learning involves various degrees of both trial and error—and insight Thus, as pointed out by Brownell [16] A given situation may (a) for one person be so familiar as to involve no learning, (b) for a second person constitute a problem that may call for considerable enlightened trial and error before insight is achieved, while (c) for a third person it may be nothing more than a pure puzzle to which he can bring only haphazard trial-and-error behavior Probably learning is on a continuum with regard to this question, with the extent of trial and error and of insight used in a given situation being determined by the difficulty of the task with respect to the capacity (intelligence, experience, motivation, mind-set) of the learner and the extent to which the means–end relationship involved is logical For example, pulling in the banana by putting two sticks together might have been less involved for Kohler's apes than was the opening of the gate of the cage for Thorndike's cats Furthermore, in Thorndike's experiment, the relationship of the center post, the loop of cord, or the lever by means of which the cat was to release himself to the opening of the cage was not, to him, a logical relationship, so that, having exhausted in vain such "insightful' approaches as trying to push down the gate or slipping through the bars, he had no alternative but to resort to trial-and-error behavior

Whether classroom activities involve trial and error or insight de-

pends to a considerable extent upon the way the teacher conduct: such activities When the child is expected to cope with material which he does not understand, he is forced to resort to trial and error It is not an uncommon sight to see children doing arithmetic problems trying multiplication or division almost at random and then looking up the answer in the back of the book to see if they should have done something else, or to base their decision to multiply, divide, add, or subtract on such cue words as *difference* and *product* Thus, number combinations can be learned by rote in which case there is little, if any, insight—or they can be presented in such a way as to involve considerable discovery on the part of students

Trial and error tend to be most inefficient from the standpoint of acquisition—and, unless reinforced by later understanding, also inefficient from the standpoint of retention and transferability Insightful learning, on the other hand, makes for progressive growth in understanding Consequently, the school needs to emphasize insight and encourage the child to discover relationships, to go beyond the memorization of isolated facts, and to strive for generalizations This is not to say that there is no room for trial and error in the classroom On the contrary, since insight (in the sense of seeing means-end relationships, although not necessarily seeing such relationships immediately upon presentation of the problem) generally comes only after considerable persistence with trial and error, students might well be encouraged to stay with a task till the relationships become clear whether the insight involved is in the form of foresight or of hindsight

PROCESS VERSUS PRODUCT OF LEARNING

A distinction should be made between the products of learning and the process through which these products are attained To some extent, this distinction bears on the relative role of educational philosophy in setting the goals (the products) to be attained and that of educational psychology in pointing to the process through which these goals can be achieved most effectively Teachers should, of course, be more concerned with the process than with the product since they have more control over the process, in fact, guiding the growth of the child implies manipulating the process of learning so as to govern not only the specific products of learning but also the speed at which they are to be attained It is also true that, if the process is right, the product tends to be right, whereas it does not follow that if the product is right the process must also have been right a person can type a perfect copy by the hunt-and-peck method or arrive at the correct answer in addition by counting—or copying! Like-

wise, i* is not a question of how much science a person learns but whether
it leads to the development of a scientific attitude and an effective method
of attacking problems Thus, teachers should be more concerned with
helping the child develop skills by means of which he can find his own
answers than in giving him the answers to memorize

This not to imply that the school can ignore the products of learn-
ing This is particularly true of the products in the area of motives, atti-
tudes, purposes, and interests, as well as those in the area of generaliza-
tions, problem-solving, and principles—all of which are often neglected
in our overemphasis on facts and skills Nor is it implied that process and
product are separate and independent the school needs to be concerned
with both, but its primary concern should be with the *how* rather than
the *what*

FORMAL VERSUS INCIDENTAL LEARNING

A distinction is sometimes made among (a) formal learning in which
the teacher deliberately seeks to have the child achieve certain learnings
through the operation of a formal program of instruction, (b) informal
learning in which the instruction is organized on an informal basis, and
(c) incidental or instrumental learning in which the learning of certain
educational outcomes is incidental to the pursuing of some other learn-
ing or activity The latter, which might be represented by the child learn-
ing the Pythagorean theorem in order to lay out a ball diamond or learn-
ing arithmetic in order to carry out a project, is often very efficient largely
because it is meaningfully motivated by being related to the child's goals
and purposes Its drawback lies in the danger of having gaps develop in
areas which do not lend themselves to integration within projects in
which the child is particularly interested

The vast amount of material the preschool child learns without ap-
parent effort and intent to learn is often given as evidence of the effective-
ness of informal learning In the same way, a great deal of learning takes
place through the informal experiences of the kindergarten and the pri-
mary school Nevertheless, the very fact that schools exist is a monument
to the ineffectiveness of learning on a catch-as-catch-can basis If some-
thing is worth learning, its learning should be planned for Thus, one
cannot rely on the child's knowing how to spell words simply because
he has come across these words in his reading This does not mean that
there should be a formal period of instruction devoted to the learning of
all the things the school considers important but, at no time, should
informal become synonymous with *haphazard* On the other hand, formal
learning need not take the form of drill work based on a compulsion by

the teacher to have the child learn—or else Learning can be formal and yet made meaningful and interesting by being related to needs and purposes of the child

Of even greater importance in the promotion of all-around growth are what Dewey calls the *collateral learnings* which invariably accompany—and often overshadow in importance—the primary learnings the teacher sets out deliberately to implant Thus, to quote Dewey [94]

> Perhaps the greatest of all pedagogical fallacies is the notion that a person learns only the particular things he is studying at the time Collateral learning in the way of information of enduring attitudes, or likes and dislikes, may be and often is much more important than the spelling lesson or lesson in geography or history that is learned For these attitudes are fundamentally what counts in the future

Whereas the purpose of learning is to make a person more capable of dealing with related situations in his environment, this would not be true if, while he is learning mathematics, he learns to dislike the subject, to doubt his abilities in this and other areas, or generally, to become less rather than more capable of further growth as a result of his having been subjected to this experience Thus, the teacher's methods as well as his personality and the classroom atmosphere, affect not only the effectiveness with which academic learnings take place but also determine whether the experience will have been helpful or harmful from the standpoint of continued growth He must, therefore, take care that in his engrossment over primary learnings he does not lose sight of the by-products Indeed, in view of the importance of the latter and the fact that they are bound to occur, the teacher must plan for the occurrence of positive learnings in these areas just as deliberately as he does in the area of primary learnings.

HIGHLIGHTS OF THE CHAPTER

The school exists for the purpose of promoting the child's maximum growth in desirable directions Growth embraces both learning and the maturation of inherited potentialities There is little the teacher can do about promoting the latter but he needs to be familiar with the natural growth of the child in order to coordinate his efforts with the various aspects of maturation as they occur The following are among the major concepts in this area with which he needs to be acquainted.

[a] Learning refers to the changes in behavior resulting from experience The exact nature of the process and its neurophysiological basis are as yet unknown

[b] Conditioning represents the simplest kind of learning The learning of more complicated material, by contrast, involves differentiation and integration and proceeds through the following sequence of steps [1] motivation, [2] goal, [3] readiness, [4] obstacle, [5] response, [6] reinforcement, and [7] generalization

[c] A number of laws have been formulated relating certain conditions with the effectiveness with which learning takes place The most important of these is the law of effect which states that, other things being equal, those responses which we followed by satisfying aftereffects are learned This law relates directly to the concepts of needs and motivation

[d] Learning involves various degrees of trial and error and of insight depending on such factors as the difficulty of the material relative to what the learner brings to the situation and the extent to which the problem involves a logical means-end relation

[e] Teachers should be more concerned with the process whereby learning takes place than in the products of learning This is not to minimize the importance of the latter

[f] Incidental learning is often efficient but whatever is worth teaching should be deliberately planned for rather than left to chance This is particularly true of collateral learning such as attitudes which arise as by-products of what the teacher sets out to have the child learn and which are often of vastly greater importance

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QUESTIONS AND PROJECTS

1 Make a clear-cut distinction between *maturation* and *readiness* as they apply to a specific academic task How would you promote readiness on the part of, say, girls fulfilling the requirements of high school science?

2 Why must each law of learning be predicated by the phrase "other things being equal?" Are the laws of science ever universal in application?

3 Single out what you consider the three most desirable features of the teaching found in your college courses and the three most frustrating What might account for the differences noted?

4 How might teaching based on the theory of learning as an active process of reconstruction differ from teaching based on the theory of learning as a passive process of absorption?

9

Guiding the Learning Process

THAT CHILDREN ARE BORN with the potentiality and the need to grow does not imply that they will, on their own, make the most of their potentialities That schools exist at all is a testimony to their inability to assume responsibility for their growth Growth results from the responses of the individual to the demands of environment and, although the learner must learn for himself, it remains a fact that the process can be made more sure and more effective by means of competent guidance Teaching has been defined in Chapter 1 in terms of the facilitation of learning it will be the purpose of this chapter to consider some of the aspects of the process by means of which this can be done

Role of Instruction in Learning

NEED FOR GUIDANCE

Providing children with a carefully selected sequence of experiences constitutes but part of the task of the school it must further provide the

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guidance necessary to make these experiences effective in promoting growth Everyday experience is evidence enough that, without guidance, the learner will usually stumble upon a method which is somewhat short of the best perhaps because it produces greater immediate results or simply because it happens to be more comfortable at first In fact, out of all the possible methods of doing any given thing, it is illogical to expect the learner to strike upon the best method possible since he is lacking in background, he would hardly be able to conceive of all the methods, let alone make a sound appraisal of their relative merits and proceed to master the most efficient one Thus, a person learning to type without instruction is likely to use the two-finger hunt-and-peck method just as, in reading, the beginner is likely to read a word at a time Generally, effective methods are more difficult in the early stages but, of course, pay dividends in later progress Thus, in golf, it would seem so much more natural to go out and just club the ball without all the fuss about stance, grip position of the elbow, of the shoulder—but it would lead to disap-
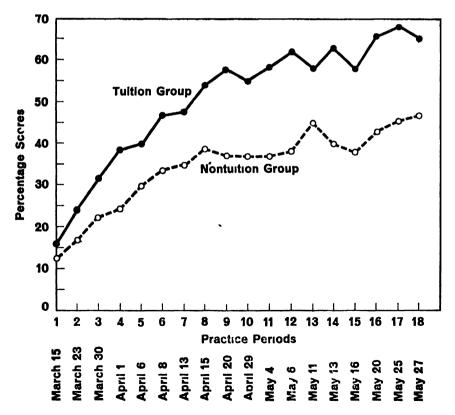
FIG 9 1 *Daily average percentage scores for the two archery groups*
After Davies [84]

pointing results Likewise, to mention a controlled experiment, if scientific proof of the value of guidance is needed, reference might be made to a study of Davies [84] in which the group instructed in the use of the bow made greater gains in archery than an uninstructed group of equivalent ability Furthermore, the more complicated the skill, the more important instruction becomes in terms of final gains Managers in organized sports, for instance, find it profitable to hire coaches not only to help the learning of the required skills by the rookies on the team but also to improve the game of even their regular players This situation is not restricted to the learning of skills—although it may appear more obvious there—but applies with equal force to the learning of meanings, concepts, problem-solving techniques, and other products of learning Textbooks, for instances, exist for the purpose of presenting in an organized manner the material relative to a given topic so as to facilitate the task of learning And some textbooks do a rather satisfactory job of facilitating learning, at least for certain students in the class Most students, on the other hand, seem to feel they can be helped to a greater extent in their learning when they have a teacher who can give them individual help and support when necessary

ROLE OF THE TEACHER

There can be no question that, whereas the learner has to do the learning, instruction can prevent waste of time and effort in his learning and, even more important can prevent discouragement and the development of ineffective techniques which will make impossible the attainment of any degree of proficiency Thus, instruction is a determining factor with respect to both the learner's progress and the final status he will attain

If the teacher is to provide effective guidance to the child s learning, it is imperative that he know specifically what role he is to play in the matter and the techniques by which effective learning can be promoted The teacher's task in this connection can be divided into three broad categories as follows

[a] The instructor must help the learner develop insight into the nature of the product to be attained and the process through which this is to be accomplished Thus, in the case of motor skills, he needs to direct the learner's attention to adequate techniques and the reason underlying their use, e g , the purpose of the follow-through in golf In ideational learnings, he should lead the learner to formulate clear-cut objectives defined in terms of behavior changes and in formulating definite plans by means of which these objectives can be reached

[b] The teacher must anticipate and prevent the use of faulty techniques through providing continuous diagnostic and remedial help in order to prevent the consolidation of bad habits Thus, whereas it is helpful, but not essential, that the instructor be able to demonstrate good form—there are cases of swimming coaches who are essentially non-swimmers—it is vital that he recognize good and poor form, i e , provide a critical evaluation of the learner's performance Of course, care must be taken to allow for a certain amount of flexibility, for, although there are methods that tend to be more conducive to success than others, even these need to be modified in keeping with individual differences among learners In fact, within limits, the learner should be allowed to develop a style of his own Again these remarks tend to be more obvious in the learning of a motor skill, but they apply equally well to other learnings of the nonskill variety some children have difficulty in learning to spell by the usual method and have to rely on the kinesthetic approach, for instance

[c] The teacher must give the learner moral support and a feeling of confidence and security He should concentrate on what to do rather than what to avoid and should refrain from adverse criticism, especially during the early stages of learning A study by Holodnak [180], for example, showed that, in the learning of a skill, emphasizing correct responses led to greater improvement than did emphasizing errors

The relative emphasis to be placed on these three aspects of the teacher's role in guiding learning would vary from situation to situation, depending on such factors as the stage of the learning, the emotional security of the learner, and the nature of the task Thus, in the case of a person who is relatively secure from an emotional standpoint and beyond the novice stage of learning, the giving of moral support might become somewhat less important than if these conditions were reversed

FORMS OF GUIDANCE

The teacher's first responsibility in the facilitating of learning, we have seen, is that of providing the learner with insight as to the nature of the product and the process by means of which it is to be attained This he can do in a number of ways he might rely primarily on verbal, or perhaps manual, guidance, or he might rely on a visual approach by using diagrams, mechanical devices, or other aids On the other hand, he might use a combination of these by having a demonstration The specific form most effective in a given situation would, to be sure, depend on the nature of the particular situation—manual guidance would obviously be more appropriate in the learning of a skill than in the learning of a verbal

concept—but, in general, the limitations of the various forms of guidance are relatively the same

Regardless of the form in which it is given, guidance is more effective in the early stages of learning than it is later It facilitates learning to the extent that it helps the learner understand what the task involves but, in the final analysis, a person learns by doing, so the learner, if he is to learn, must actually go through the process of learning on his own Research [129] has shown that manual guidance, tracing, or running the pencil in grooves in a board soon become less effective for children learning to write than direct practice writing In Waters' investigation of the effectiveness of guided practice [404], for instance, the group with eighty guided trials took a total of 2832 60 seconds to learn the skill as compared to 2191 00 seconds for the group without guided trials As shown in the accompanying table, the former group, on the other hand, took over

TABLE 9 1

THE INFLUENCE OF MANUAL GUIDANCE UPON HUMAN MAZE LEARNING *

Group	Total Trials	Total Time	Unguided Trials	Unguided Time
Control	37 48	2191 00	37 48	2191 00
G—20	62 75	2114 55	42 75	1714 55
G—40	67 70	2233 75	27 70	1433 75
G—80	103 40	2832 60	23 40	1232 60

* from Waters [404]

one-third fewer unguided trials than did the latter to attain the same proficiency The groups with twenty and forty guided trials seemed to have been as successful as the unguided group Thus, the question of effectiveness in the guidance of learning often revolves around the criterion used in measuring this effectiveness about all that can be said with any degree of assurance is that guidance reaches a point beyond which its effectiveness ceases to increase or, in short, that it can be overdone

Verbal guidance can be very helpful in the development of such things as meanings, concepts, and other complex ideas but it tends to be of relatively limited usefulness in the development of skills It is particularly useless when applied in teaching skills to beginners, since it is next to impossible to give an adequate description of a skill without being either inaccurate or tedious and labored The point is rather clearly illustrated in the following episode A woman teacher who had had no experience in knotting ties was given a man's four-in-hand tie The demonstrator proceeded to give, via a tape recorder, very specific and detailed instructions as to how she should proceed step by step As

might be expected, he had 'lost" her in a relatively short time even though to those who had experience with ties his directions were superbly clear A similar demonstration could be staged with a Boy Scout explaining various knots with a rope without benefit of demonstration Verbal guidance is, of course, effective in improving the skills of a person already familiar with the basic aspects

Films have certain advantages over other approaches in that they can combine the visual with the verbal approach and, in the case of a skill they can provide a slow-motion demonstration without distorting the performance On the other hand, they too have definite limitations often there is just too much for the beginner to see and grasp at one time and, as a result, just as any other medium improperly used, they cause confusion Films, charts, and graphs also have great possibilities in conveying certain ideas such as the structure of molecules or certain chemical reactions which are difficult to describe by means of words alone

Whereas guidance can be effective in facilitating learning, particularly in the early stages, it must be noted that, if given to excess, it tends to be detrimental to learning inasmuch as it destroys the initiative of the learner and causes a shift in the sense of personal responsibility for the learning from the shoulders of the learner where it belongs to those of the teacher Once the learner has grasped the general nature of what he is to do, he must be allowed to go ahead on his own Teachers often talk too much they direct the solution of a problem step by step, or they tell the child when to multiply, divide, add, or subtract to the point where the child is learning not arithmetic, but simply how to follow directions Some teachers feel they are shirking their responsibilities if they fail to cover every minute detail in a lesson Actually, their responsibility should be limited to providing the general framework and to encouraging students to tie the pieces together for themselves In the same way, many a lab manual in science teaches the student to do nothing more than follow directions in a blind step-by-step fashion Thus, whereas guidance is necessary for effective learning, it should as a rule be kept to a minimum Generally, for instance, an overview of what is to be learned, perhaps a demonstration or two where appropriate, should suffice Where tools are involved, then use should be made reasonably clear, of course, but once again, the important thing is to let the learner do the learning It might also be said in passing that the learner deserves good tools too often, for example, the child, attempting'to play the violin on a five-dollar instrument entirely out of tune, is forced to the decision that the skills

involved are too complicated for him, he might have done better under more favorable conditions

Learning Curves [1]

As learning progresses, it is possible in some cases to measure the changes in behavior as they take place The resulting learning curves provide a graphic representation of the progress of learning occurring per unit of practice time Thus, in typing, one might plot the number of words typed per minute on the vertical axis against the number of practice periods on the horizontal axis First introduced in 1897 by Bryan and Harter [49] in connection with speed of sending and receiving in telegraphy, this idea has found considerable acceptance on the part of teachers and pupils, and it is used rather widely where it is applicable

Although reference is sometimes made to the learning curve there is no single or typical curve that characterizes learning Probably the basic curve would display a slow initial rise followed by a more rapid rise and finally a flattening out However, the shape of the curve would vary with

Number of Practice Periods
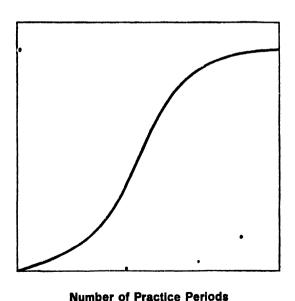
Fig 9 2 *Theoretical learning curve*

[1] Learning curves are more correctly *performance* curves from which learning is inferred

such factors as the stage of the learning that is involved, the nature of the material, the capacity of the learner, his motivation, and innumerable other factors In fact, measuring improvement in terms of the reduction in the number of errors or in terms of the score obtained would result in entirely different curves Furthermore, in the usual case, somewhat less than the complete curve is likely to be involved For instance, the plotting of the progress of the learner in a given skill may not catch him at the zero point with regard to his learning of that skill and, thus, the plotting of his progress might show only the top part of the curve shown here Or the plotting may not be continued until the limit of improvement has been reached so that the flattening out of the curve would not be shown

Generally, when a person has to start the learning of a given activity from scratch, his early progress will tend to be slow This may be due to a number of factors, among which might be mentioned that the learner may have to master subskills before he can put them together into a complete performance, he may have to unlearn conflicting skills or habits, or he may be using an ineffective approach Thus, learning to type generally shows slow initial progress largely because one has to learn the position of the letters on the keyboard and also to coordinate the movement of the fingers with the perceptions he gets through the eyes Slow progress may also be due to feelings of uncertainty on the part of the learner which prevent him from devoting his whole energy to the learning On the other hand, where early progress is rapid, it is generally due to positive transfer from related learning or initial enthusiasm Thus, a person's batting in softball might show rather rapid progress in the early stages simply because of his previous experience with baseball In some cases, rapid initial progress may be due to the fact that the earlier phases of the total activity are the easiest

Learning curves frequently display what is known as a *plateau* or period of no apparent progress which is then followed by further gains Thus, in typing, a person may, after having made rather consistent gains for some time, reach a point where, perhaps for weeks, no further gains are made—only to have progress resume later Whereas plateaus are not an essential part of the learning curve and can perhaps be avoided in many cases, their occurrence can be explained on any of the following bases

[a] There may be a need to reorganize previous learnings into a new pattern before further progress is possible In typing, for instance, one has to move from the stage of typing one letter at a time to typing one word at a time, and to typing one phrase at a time Thus, a plateau may

represent a period of actual progress although the performance may not show it

[b] The learner may have hit upon bad habits which must be replaced before he can advance to a higher level of achievement

[c] His lack of progress may be due to decreased motivation or to emotional tenseness which prevent him from using his abilities effectively

[d] The task may not be of uniform difficulty throughout

[e] Undue attention to one of the subaspects of the total performance may throw the total performance out of kilter This is particularly true when the subaspects are learned separately and they have to be put together into an integrated performance It may even be that progress is being made in the subaspects but is not yet reflected in the total performance

[f] Plateaus may represent shifts from one limit (either motivational, physiological, or method, as we shall see in the next paragraphs) to another

Whereas short-lived plateaus are understandable and not particularly harmful, the teacher should detect their presence early and take steps to see that they do not lead to bad habits, tenseness, or discouragement The teacher's effort should be directed toward analyzing the student's performance to discover if perhaps some unnoticed aspect needs correction and toward providing encouragement in order to maintain motivation at a high level The learner needs to be kept from worrying about lack of progress and from losing confidence in his ability It might be pointed out to him, for instance, that baseball players sometimes fall into batting slumps lasting weeks and even months Nertheless, it is probably best to avoid, whenever possible, the occurrence of such plateaus There are reasons to believe that the likelihood of plateaus can be minimized by pacing the learner [202] Thus, in first grade reading it is customary to introduce only so many new words in a given lesson and a special effort is made to see that the child consolidates his gains as he goes along It is also likely that the occurrence of plateaus would be minimized by practicing complex skills as a whole rather than by mastering each part separately only to have difficulty later putting the parts together

Of course, improvement cannot last forever and, regardless of the skill or activity, the learning curve will eventually have to reach a limit where no further improvement is possible These limits are generally known as *physiological limits*, i d, limits beyond which further practice will not enable the learner to improve simply because of the limitations of his physiological equipment Actually, physiological limits are sometimes

more properly *methodological, mechanical,* or *materials* limits since the limits are not set so much by limitations in physiological structure as they are by limitations in the method (e g, the hunt-and-peck method in typing) or in the equipment or material used, and it is quite possible that, with a better method or with better equipment and material, new gains could be made It might be pointed out, incidentally, that these limits are hypothetical since probably no one has ever reached these maxima—or at least no one can be sure that he has reached them

In practice, the limit of performance reached is not set by the limits mentioned above but rather by the individual's judgment as to what is good enough or adequate for the demands of the situation Thus, a typist goes on typing sixty words per minute for years, not because that is as fast as the fingers in her hand can go but simply because she doesn't have to type any faster to hold down a job If a promotion were to be made conditional on her typing faster, she, no doubt, could increase her speed to a new motivational limit Of course, just as physiological limits would vary from person to person, so would motivational limits, in fact, it is likely that the successful people in this world are those whose motivational limits come closer to their physiological limits than they do for the average person it is not unusual, for instance, to see professional musicians and athletes practice by the hour to get one little skill down to perfection

Whereas the learning curve tends to show a gradual improvement in performance, the improvements involved are, in actual practice, anything but smooth In fact, short-time fluctuations are to be found in all learning curves whenever day-to-day performance is plotted without averaging This is fully understandable in view of the innumerable random factors that affect one's performance, e g, differences in motivation, in health and other conditions of the learner, distractions, errors of measurement, and many others

Learning curves are of considerable value, particularly from a motivational point of view in that they give the learner graphic evidence of his progress which is an effective motivational device for those who are making progress They also can portray lack of progress, and to those making only meager headway, learning curves can bring discouragement unless the teacher makes a special effort to prevent this from occurring Thus, a certain degree of caution on the part of the teacher in the use of learning curves seems in order lest the child, seeing his own lack of improvement in relation to the learning curve depicting the class average become discouraged or become so tense that it is well-nigh impossible for him to make progress

A real limitation in the use of learning curves is the fact that the number system by means of which performance in certain areas is measured does not lend itself to such graphic representation Thus, a learning curve can be drawn for words typed per minute, seconds to run a hundred yards, or free throws out of one hundred in basketball However, most educational measurements are made on the basis of a displaced cardinal series, and there are certain problems to be faced when plotting, say, progress in a history course where scores are reported as a percentage or a percentile Thus, if John stands at the 75th percentile of his group on the first test, at what percentile should he stand on the second test in order to show improvement? This question will be considered in a later chapter

Role of Practice in Learning

In discussing the law of exercise in the previous chapter, it was noted that practice leads to an improvement in performance only when accompanied by a motivation to learn Thus, the saying "practice makes perfect" is only a half-truth practice is a necessary condition for learning but it is not a sufficient condition, since as a result of practice one's performance may improve, may remain at a standstill,[2] or it may even worsen as many college students can testify by evaluating the quality of their handwriting Practice gives the learner an *opportunity* to improve his performance by discarding errors, and by trying short-cuts and more efficient methods, but whether he takes advantage of this opportunity depends on whether he wants to improve Dunlap's success [101] in curing himself of the habit of typing '*hte*" instead of '*the*' by deliberately practising the wrong response and in removing facial ticks by forcing the person to repeat the tic till he became very reluctant to do so is evidence of what learning does take place when practice is not accompanied by motivation Nevertheless, even though practice does not ensure improvement, improvement cannot take place without practice and the school needs to encourage practice in order to promote a greater degree of understanding retention, and transfer

For practice to be effective, it should take place in a meaningful setting Thus, research [23] has shown that learning to type by writing meaningful material has led to greater gain than long-continued drill on meaningless letter combinations In some ways, the advice given be-

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[2] A distinction can be made between *learning* a skill or a fact and *using* it once it has been learned

ginning typing students to build up accuracy first and then concentrate on speed later is questionable since introducing the element of speed later simply changes the whole performance into a brand new skill Thus, it is better to have practice integrate both accuracy and speed from the beginning and learning curves should incorporate both elements Generally, the most effective type of practice is that in which the learner uses his previous learning in dealing with more advanced work This can be done readily in subjects which are sequential such as mathematics where it is probably better to have the child use his skills in dividing in connection with a problem than to subject him to drill work Likewise, the child can practice effective writing in connection with projects in other subjects and, in certain areas, classroom discussion can be particularly effective in forcing the child not only to recall material but also to apply it to new situations Unfortunately, many teachers seem to find it easier to assign drill than to devise meaningful sequential experiences which might permit the child to use his previous learning in his climb to new heights At the same time, there is still room in the modern curriculum for drill but, of course, it must not be of the monotonous variety which very often leads only to learning negative attitudes toward the subject and toward the school, especially when it is prescribed for a whole class despite the fact that many of its students do not need it

The question of the most effective practice calls for a discussion of the extent to which the practice periods should be distributed—in a series of relatively short periods or massed into relatively few periods of longer duration Of course, much would depend on the nature of the material and of the learner but, in general, research [212] has shown some advantage in the spaced practice periods from the standpoint of long-term retention On the other hand, from the standpoint of immediate recall, no great difference is to be found between the two Thus, cramming just before the material is needed is economical and generally advisable if the sole purpose is to put on a school play or to pass an examination, or if only so many hours are available in which to learn a given unit of material However, in the classroom situation, since school experiences tend to be the foundations upon which future learnings are based, cramming is definitely an ineffective procedure, regardless of its popularity In order to promote long-term retention, teachers should encourage distributed practice through the setting of frequent quizzes or classroom discussion in which the material is used

In general, short practice periods spaced over a certain length of time produce maximum efficiency in learning Starch [364], for instance, found that two 10-minute periods per day over six days led to greater

learning than one 40-minute period for each of three days or one 120-minute period in a single day However, just how short is "short" depends on many factors in the task, in the learner, and in the learning conditions Short periods have advantages in terms of greater motivation, greater concentration, better physiological cond t.ons (absence of fatigue), rehearsal between practice periods, and differential forgetting They also prevent the consolidation of errors in early stages On the other hand, changing from one activity to another always involves some waste, particularly when the activity calls for getting out equipment or special dress or for a warming-up period, and this waste has to be balanced against the disadvantages of having the learning period excessively long The time elapsing between practice periods should be neither so long that the learner forgets everything between periods nor so short that there is insufficient time for the wrong responses to drop out

Thus, there is no conclusive evidence as to the optimal distribution of lessons The teacher must decide for himself how long a period is most productive of learning for the children in his care and must work out his schedule accordingly Actually, the length of practice periods as they pertain to the academic material of the classroom is becoming progressively less important With the modern experience curriculum and its emphasis on planning, doing, and evaluating, the child gets such a variety of activities to perform that negative effects from long periods are relatively improbable Many schools are finding the two-hour block in core subjects, for example, less troublesome from the standpoint of pupil efficiency than they found the more formal 50-minute period

Parts versus *Whole*

Of considerable interest in connection with the effectiveness of learning is the relative superiority of learning a given unit of material as a whole or of learning it by parts and combining the parts later Unfortunately, research on this point is somewhat conflicting Whereas early evidence gave definite indications of the superiority of the whole method, recent studies, while still favoring the whole method especially when combined with distributed practice [192], have not been so conclusive' Actually, it is very difficult to carry out such a study for it depends on a number of factors and may well vary from task to task and from learner to learner the whole method might be inadvisable, for instance, in the case where the material is of uneven difficulty or where the learner is

easily discouraged and needs the constant reassurance that he is making progress Furthermore, in an experiment of this kind, it is difficult to prevent the group learning by parts from getting an overview of the material and, thus, destroying the experiment

The problem itself is vague because it revolves around the question "What is a whole and what is a part?" It is obvious that any whole is part of a bigger whole and, in the final analysis, all learning has to deal with a part of some larger whole The question then becomes, "What constitutes the optimal unit of study for a given person under given conditions?' Hence, the conflict in the research evidence It seems the answer to the question must be sought in the concept of meaningfulness Learning a passage one word at a time would obviously be inefficient from the standpoint of both learning and retention since it would rob the passage of its meaning and would, therefore, be the equivalent of learning nonsense material On the other hand, taking too broad a unit would make it difficult for the learner to grasp its meaning and would increase the difficulty of learning Thus, the learner should probably choose as his unit of study whatever he can grasp clearly and meaningfully, whether this be a chapter, a paragraph, or simply a sentence It follows that what constitutes the optimal unit for one person would not — because of differences in intelligence, experience, organizational ability, attitudes, and motivation—necessarily constitute the optimal unit for another person

' Whenever a person can impose a structure on a given unit to the point of being able to perceive its relationships, he should probably study it as a whole, regardless of its size (within limits, of course) On the other hand, in the case of nonsense material, the part method might prove as effective as the whole method, although even then it is usually possible to impose some kind of structure on the material to facilitate its acquisition Furthermore, even when the part method is used, for whatever reason, the learner should first get an overview of the material and structure the field so that the parts fall into place

The parts method tends to be ineffective because, in addition to failing to provide [a] the structure by means of which the learner is able to make use of the relationships, and, [b] the continuity of the material in order to relate one part to the other and all of the parts to the previous learnings, there is still the problem of putting the parts together after each has been learned This can be particularly troublesome in the case of a complex skill where fitting the parts into perspective is the crucial part of the learning and where, no matter how effective one part may be, unless it is coordinated with the other parts of the skill, the whole per-

formance will be relatively poor To avoid this difficulty, it may be advantageous, when dealing with a passage too long to be learned as a whole, for the learner to use what is known as the progressive parts method Thus, in learning a long selection of poetry, instead of learning each stanza one by one, it would probably be better to learn the first stanza, then the first and the second together, and then the first, second and third, and so on.

Recitation versus *Re-reading*

Another problem which is of definite interest to teachers is that of the relative emphasis to be placed on the reading and re-reading of material as opposed to spending a certain amount of the time and effort in recitation Experimental evidence on this question, particularly the study by Gates [128] and more recently that by Forlano [118], has shown rather conclusively the greater effectiveness of recitation over re-reading, particularly from the standpoint of delayed recall Forlano's data, shown in the table below, suggest that one might profitably spend up to 80 percent of the total learning time in recitation Of course, this percentage

TABLE 9 2

RELATIVE EFFECTIVENESS OF READING AND RECITATION
ON IMMEDIATE AND DELAYED RETENTION [*]

Fraction of time devoted to recitation	Immediate recall	Delayed recal
Reading only	7 17	7 20
1/5 of time devoted to recitation	7 34	7 79
2/5 of time devoted to recitation	7 20	7 73
3/5 of time devoted to recitation	8 49	8 54
4/5 of time devoted to recitation	8 53	9 02

[*] from Forlano [118]

would vary with the nature of the material, and it is probably too high in the case of meaningful material where re-reading would be more efficient Recitation should not be guesswork One ought to take enough time in reading a passage to get a good grasp of its content before concentrating on recitation It also follows that where, over a period of time, the material has faded too badly, it should be reviewed by re-reading rather than by recitation

The superiority of recitation over re-reading can be attributed at least in part to the fact that recitation, by providing the learner with immediate goals, makes for a greater degree of ego-involvement and therefore leads to greater effort on his part It also provides immediate reinforcement of his responses and enables him to devote his attention to those aspects of the total learning which he does not know Furthermore, since one learns what one does, recitation gives the learner an advantage by familiarizing him with a situation similar to that on the basis of which gains are to be measured, and thereby promotes a feeling of confidence and at-homeness during the test It must also be noted that re-reading is a relatively ineffective procedure as it tends to be a very passive process, whereas learning, to be effective, must be active In fact, unless one reads with a purpose, he may find himself just reading words without comprehension of the meaning of the passage

As a rule, a child should not be asked to re-read a single source over and over as a means of increasing his understanding of its contents Relatively little is gleaned from such re-readings, in fact, if the meaning of the passage is not clear, it is very likely that the student will get nothing for his pains but verbalisms It would be better for him to make an extensive coverage of many related sources than for him to make an intensive coverage of the same source Yet teachers often discourage the dull child from going beyond the basic text on the argument that he "has his hands full already" Children should be trained in skimming so that they can cover a number of references quickly, just looking for what is new or what is expressed in such a way as to clarify their understanding of the first source

Method of Presentation

Psychology has made considerable study of the relative effectiveness of the different sensory avenues to learning Much of this research does not have direct application to the work of the classroom, but teachers should be familiar with those phases that are pertinent, for it should be clearly understood that the recent shift in our schools from an emphasis on teaching to one on learning has not minimized in the least the importance of effective presentation The student must do his own learning but the teacher is hired to facilitate his learning and effective presentation is an essential aspect of this facilitation

As it is presently organized, the average classroom relies almost exclusively on visual and auditory presentation of content Thus, most of the information the child gets is acquired from listening to his teacher (or perhaps to other children) and from looking at the printed page, chart, graph, or film Even in such areas as physical education and typing, the instruction is largely verbal and visual, although kinesthetic stimuli are also of major importance in the actual learning of the skills involved Research evidence suggests that, in general, the difference in the relative effectiveness of the two principal sensory avenues of instruction—auditory and visual—is slight Goldstein [142], for example, found a correlation of 78 between learning through reading and through listening The difference may, of course, be relatively great in the case of a given individual—it would obviously be so in the case of a blind person Differences in ability to profit from a given presentation would also exist with differences in intelligence and experience Thus, the gifted may get more out of reading silently a great deal of material whereas the dull may profit more from having a small section explained by the teacher or even read aloud while he follows from his own book Generally, the more sense organs stimulated, the more effective the learning Thus, the use of a picture to complement a verbal explanation is likely to result in more learning than if either is used singly Some teachers, using the teacher-directed method of teaching spelling, have pupils write words while they say (and hear) the letters and look at the spelling on the blackboard [*]

Psychology has also done considerable research in the area of perception It is known, for instance, that attention is a matter of quick
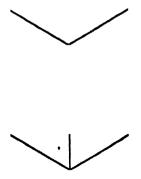
FIG 9 3 *Ambiguous figure After Starch* [364]

[*] This would, of course, assume that each individual child had to learn most of the words being presented and would not be wasting an undue fraction of the time on words he already knew

shifts and that one cannot keep his attention on a given thing for too long a period of time as can be seen readily by trying to attend closely to the drawing reproduced here Teachers should be particularly conscious of the young child's inability to concentrate for long periods of time and should attempt to keep the periods in which the child has to pay close attention rather short, to vary procedures, and, most important, to get the child interested in the work, for even young children can stay for surprisingly long periods with a task that genuinely interests them

Teachers need to be concerned not only with keeping the child's attention on his work but especially with directing his attention to the important things which need to be noticed Children and even adults, especially in an unfamiliar setting, notice relatively little of what there is to be perceived This is illustrated dramatically in the case of an accident, for instance, but it is possibly just as true that many children who misspell or misread words consistently may be troubled by faulty perception in either or both the written and the spoken form of the word, e g, "goverment" instead of 'government'

Fortunately, perception can be improved, not only through improving the sensitivity of the sense organ (as through glasses or hearing aids, when needed) but also through the cultivation of effective perceptual habits and the development of the proper experiential background Clear perception is often a matter of understanding the field, of having a framework into which details must fit in order to complete the picture Without this framework, the learner does not realize the details are missing and does not look for them Thus, the teacher should be more concerned with presenting the outline of a lesson than in presenting the details, in fact, overemphasis on details only serves to obscure the structure of the material and, in the case of the dull child, often leaves him with a great number of unorganized details Clear perception also implies negative adaptation or ability to withstand stimuli that are not relevant from the standpoint of the structure of the field Thus, the child who is not too clear on the nature of his problem is likely to be attracted by irrelevant details and the teacher should make it a point to provide him with well-directed questions so as to keep him on the right track Perception is also affected by our needs as can be seen from the fact that hungry people are more likely to be sensitive to food stimuli Consequently, a good part of the secret of improving perception lies in creating a motive note, for example, how children who can't tell one word from another don't seem to have difficulty in identifying cars and planes on the basis of details which are quite obscure to us

Effectiveness in Learning

The effectiveness with which the learning of a given task takes place depends upon a multitude of specific factors, most of which can be synthesized under the concept of readiness interpreted broadly as referring to the relative adequacy of what the learner brings to the situation in the form of ability and experience in relation to the demands of that situation. A most important aspect of this readiness consists of the learner's motivation, his intent to learn, his self-confidence, his relative freedom from competing motives as might be involved in distraction and fatigue, and especially his relative freedom from anxiety and emotional blocks[4] Also directly involved in a most crucial way is the relative adequacy of the teaching and learning methods used in promoting said learning

EFFECTIVE STUDY HABITS

This section will be brief, not because of its unimportance to prospective teachers but because it will tend to repeat what has already been covered elsewhere and because most college students have had considerable acquaintance with study methods in their freshman orientation classes

Learning is a complex task and there is no one learning method which is best for all combinations of learners and material There are, however, certain general rules which tend to make for effective learning periodic review of the material learned has been shown to be a good procedure while cramming is generally to be discouraged since it is not effective with respect to the long-term retention which is required when advanced material is based on prerequisite courses These rules are based on the principles of educational psychology—some of which we have yet to cover—which in turn, have been derived from research However the problem of determining the best method of learning is made difficult by our relative inability to control the multiplicity of factors involved and, any conclusion reached, consequently has to be interpreted in the light of the specific factors operating in the situation from which they are derived Furthermore, the conclusions stem from the superiority of one method over another in terms of group averages and do not imply an exception-free situation

Study habits are a form of habit motives which, because of their

4 These are really a form of competing motives

self-sustaining nature, are of major importance in determining the effectiveness of the learner's efforts Many people, for instance, continue in ineffective methods simply because their attempts to change to more sufficient procedures lead to such conflict that their performance very often becomes poorer rather than better In other words, an effective method does not necessarily yield outstanding results immediately—although it generally does in the long run, and the learner should be cautioned against continuing to use ineffective methods simply because they are more comfortable or because previous attempts to use better methods did not automatically lead to an improvement in the efficiency of his learning

The following are among the rules of study which have been found effective for the majority of students and, although they may not apply in individual cases, they tend to do so once the student has become accustomed to them·

Make efficient use of study time Time, like other things, must be budgeted or it will be wasted The student needs to make a habit of scheduling his study periods and of getting to work promptly The habit of "studying later" or putting off assignments until "tomorrow" can be fatal from an academic point of view Studying when "in the mood" has obvious advantages from a motivational point of view but it is too undependable However, once the habit of studying is established it will produce the proper mood Furthermore, the proper mood can be induced by going through the motions of studying

Emphasize understanding Getting an overview of the material before studying in detail is sound from a psychological as well as an empirical point of view for it structures the field and makes for greater meaningfulness The practice of organizing, outlining, and synthesizing generally pays off in increased understanding, greater transfer to other situations and greater retention Likewise, one should strive to increase his vocabulary, his comprehension, and his reading speed

Get acquainted with the library and with outside references Develop a critical attitude and an ability to digest rather than merely to accumulate Do not rely on a single source for rarely is one source sufficiently complete learn to skim other sources for additional information

Make periodic reviews of the material Take functional notes in connection with class and library work and, in some way or other, identify the main ideas in your text so that they can be reviewed quickly and effectively The review periods should be spaced at gradually increasing intervals, the first, second, and third review occurring perhaps a day,

a week, and a month after the original learning It is also wise to over-learn the material somewhat

Become ego-involved in the learning Develop a realistic level of aspiration and strive for realistic goals

Many other rules could be given, of course, but space does not permit further discussion of a topic on which so much is readily available The student is urged to refer to one of the many sources on the subject to be found under *Study, Methods of,* in the card catalogue of the library In reading these references, he should attempt to relate each suggestion to some basic principle of psychology rather than merely accept it as an arbitrary rule—he should attempt to learn not only what works but also why it works

ADULT LEARNING

There is considerable theoretical as well as empirical evidence to disprove the old adage 'You can't teach an old dog new tricks'" While it is true that one's mental development does not show appreciable gains after the middle teens and that it begins to decline in the forties, if not before, the adult can generally outlearn the child and, perhaps even the adolescent As we have seen in Chapter 7, the adult has so much more experience to bring to bear on the solution of a given problem or to which to relate the new material that, even though he is no brighter than the child or the adolescent, the material is relatively more simple for him to grasp Furthermore, his greater command of the language generally makes it easier for him to manipulate ideas

Whether the adult could outlearn a younger person on material that is so completely new that he could not use his past experience is difficult to determine since it is impossible to set up an experiment in which factors such as the difficulty and the degree of unfamiliarity with the tasks, the confidence of the learner, and the motivation and the clarity of purpose could be controlled From a practical point of view, we may assume that, since an intelligence test is generally composed of novel situations to a greater extent than are found in the usual lines of activity in which a person indulges, the decline in the adult's learning ability in such an endeavor would be at least no greater than the decline in his performance on an intelligence test If we accept this assumption, we may infer from a study of the standardization data of the Wechsler Adult Intelligence Scale [412] on page 264 that the peak in learning efficiency is probably reached in the middle twenties and that one's ability to learn new material declines after that But it must also be noted that

performance on the verbal scale—and especially on such subtests as in-
formation, comprehension, vocabulary, object assembly, and picture com-
pletion—is relatively resistant to the ravages of time As these functions
are involved in whatever the adult attempts to learn, age would be no
great handicap to him It is generally agreed that, just as the loss of agility
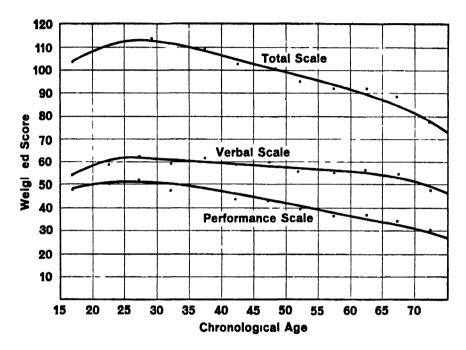
Fig 9 4 *Performance on the Wechsler Adult Intelligence Scale in rela-
tion to chronological age After Wechsler* [412]

with age would be a factor in the learning of a certain physical skill, so,
in the learning of verbal material, the loss of learning power would stem
more from a loss in plasticity than from a loss of mental power, although
the latter would also be involved in old age The matter of rustiness would
also play a part, especially in the case of unskilled or semiskilled workers
who have not kept up with academic-type material

Thus, the problem of the learning ability of adults is one of whether
or not experience compensates for the relatively slight losses in intelli-
gence and, obviously, this would vary with the nature of the task in-
volved Probably the most important factor, however, is that of motiva-
tion If the adult looks upon what he is to learn as child's play, or if
he starts convinced that he is "too old to learn," he will be operating
with his brakes on and will confirm his opinion All the evidence points

to the fact that, if he wants to learn, he need not deny himself the pleasure simply because of his age the whole matter is very nicely synthesized by Thorndike's sage comment [382]. "The time for learning anything is the time when you need it "

HIGHLIGHTS OF THE CHAPTER

Even though the child must learn for himself, it is still a statement of fact that his learning can be made more sure and more effective by competent instruction This chapter dealt with some of the considerations involved in facilitation of learning

[a] Schools exist for the purpose of providing guidance whereby efficient learning can be promoted

[b] The teacher's main contributions to the learning of the child consist in [1] helping develop insight into the nature of the product and the process by which it is to be attained, [2] preventing the development of faulty techniques, and [3] giving the learner moral support

[c] Whether the guidance given by the teacher takes the form of verbal, visual, manual or a combination of these, it is generally more effective in the early stages of learning Furthermore, it can be overdone

[d] Learning curves show graphically the progress made by the learner Plateaus which are common characteristics of such curves can probably be avoided by pacing the learning

[e] Practice is a necessary but not sufficient condition for learning Short-spaced practice periods generally produce the most efficient learning

[f] Generally speaking, learning by parts is not as efficient as learning by wholes when *wholes* are defined in terms of the largest meaningful unit (within limits) the learner can grasp

[g] Recitation tends to promote more effective learning than does re-reading

[h] The various methods of presentation of classroom material tend to be equally effective in promoting learning

[i] Prospective teachers should be familiar with the relative effectiveness of the various study habits in order not only to improve their own learning efficiency but also to provide more competent guidance to their students in the cultivation of effective study techniques

[j] Adults can generally learn as well as younger persons of equal mental age Probably the most important determinant of the effectiveness of the learning of adults is their motivation

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QUESTIONS AND PROJECTS

1 Evaluate Educational practice has, in many cases determined into soft pedagogy and false humanitarianism Actually, it doesn't make too much differ-ence how children are made to learn worthwhile material, as long as they know it In this day of scientific advance and world uncertainty, it is time we brought the importance of knowledge back into proper perspective

2 Analyze your note-taking habits (and other study habits) in the light of suggestions given in various sources on the subject Do you feel you are accomplishing according to your abilities? If not, find out why (ask for help, if necessary) You might try keeping a time budget for a week to see where "all your time goes to"

3 Analyze the study habits of two of your friends of approximately the same ability but with widely different achievement levels

4 Outline the next two chapters in this text and be prepared to hand them in to your instructor Don't forget to incorporate your outside readings

10

Motivation

THE TOPIC OF MOTIVATION, obviously one of the major concepts of psy-
chology, is of particular significance to the classroom teacher whose task
it is to direct the growth of his pupils toward worthwhile goals This text
recognizes this fact in its orientation toward the psychodynamics of human
behavior This chapter is added to make explicit with reference to the
classroom some of the principles discussed in Chapter 2 and is not in-
tended to provide a bag of tricks to be used by the teacher as a cure-all
for the indifference toward schoolwork often encountered among school
children Motivation involves a complex interaction of the conditions
within the individual and the total environment in which he finds himself
It is certainly more than a rabbit that can be pulled out of the hat at the
beginning of a lesson to make the students, individually and collectively,
full of attention and eagerness to participate in whatever the school has
to offer—regardless of its suitability

Nature of Motivation

MOTIVATION—A PERSISTENT PROBLEM

In probably no area of pedagogical endeavor is the teacher so inadequate as in the area of motivation Not only have such studies as that of Davis [85] found motivation to be the number one problem of teachers at all levels of public school,[1] but even a casual visit to the average classroom is likely to reveal anywhere from one to several children apathetically going through the motions of participating in the activities of the class but really accomplishing very little, if anything After contending with the repeated "I just can't understand that," "that's sissy stuff," "I'll never use that," and the even more common instances of passive resistance on the part of students, the teacher usually gives up trying to improve the situation and rationalizes his ineffectiveness by pointing out that one child missed a lot of school, that another is lacking in background, that a third is not interested, that the parents don't cooperate Other teachers don't give up easily and, by alternating threats, appeals, punishment, and reward, all in somewhat random order, try to get some semblance of activity from the student but very often their frantic attempts to *motivate* him only serve to aggravate the problem When activity does take place, one would almost be sure that the operation is powered by a low octane mixture complicated further by an unreleased emergency brake in the form of academic deficiencies, emotional blockings, lack of maturation, or lack of experience Yet, contrary to what the teacher would like to believe in order to justify his inability to reach him, the student is not lazy On the playground, he is as active as the genius of the class and, after school, he may delight his employer in the grocery store or the service station with his pep and his willingness to oblige It is just schoolwork that leaves him cold!

What it amounts to is that the teacher does not understand what makes children tick He just does not understand that perhaps the student has been led to form a self-image which leads him to reject everything connected with the school, or that the schoolwork is not related to the student's needs and purposes—nor does the teacher know how to effect a change in the situation Perhaps the teacher's lack of competence in this area stems from an overemphasis in teacher-preparation on the *what* and *how* with a corresponding underemphasis on the *why* but, whatever

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[1] Whereas certain studies have found discipline to be the number one problem, failure in discipline is nothing more than failure in the direction of motivation

the cause, there is need for him to become more conversant with the psychodynamics of human behavior as they pertain to behavior in general and to learning in the classroom in particular That is, the teacher must understand both the theory and the method of motivation so that he can be more effective as a teacher, for, as stated by McConnell [130], "There is no more important problem in teaching . . than that of motivation "

MEANING OF MOTIVATION

Motives can be conceived as predispositions toward certain kinds of behavior which have developed within the individual as a result of the relative success of his various attempts at satisfying his needs Peer approval, for example, becomes a motive to the adolescent to the extent that, because of its effectiveness in satisfying his needs of belonging and social recognition, he habitually orients his behavior toward its attainment whenever tension from the frustration of these needs leads him to act Thus, motivation can be understood only within the framework of the concept of needs, goals, habits, values, the self-image, and the phenomenal self as discussed in Chapter 2, a good grasp of which is essential to an understanding of the present discussion Some of the basic ideas, as they relate to the problem of learning, will be reviewed in the next few pages

Motivation derives its significance from the concept of needs and related concepts In a sense, therefore, this chapter does nothing more than spell out how the learner can be encouraged to satisfy his needs through participation in activities that will lead to the attainment of desirable educational goals More specifically, the key to motivation lies in the regulating of the satisfaction the individual derives from his behavior, for learning—whether of ways of dealing with academic material or with personal and social problems—occurs when previously learned responses are no longer adequate in providing satisfaction for one's needs Thus, the child in the classroom does not learn because he has an innate interest in the intricacies of algebra or of history he learns because by so doing he can satisfy his needs of social recognition, self-esteem, and belonging, because such learnings are important to him from the standpoint of his habit motives and his self-concept 'On the contrary, many a child is not motivated toward schoolwork simply because past experience has shown him that it has nothing to offer him by way of satisfaction of his needs Much time and effort devoted to improving the child's use of the English language is wasted, for instance, because such improvement is not a potential satisfier of his basic needs. As long as he can satisfy his needs through out-of-school activities, he will feel no pressure to

become particularly interested in schoolwork and his efforts in the classroom will be dictated only by his need to avoid punishment Thus, the child's motivation which is so complicated and difficult to understand when considered from the standpoint of actual behavior becomes quite clear and understandable when approached from its underlying basis of needs, motives, goals, and the self-image The child has needs which have to be satisfied it is up to the teacher to see to it that he derives satisfaction for these needs while taking part in activities which the school considers worthwhile

Motivation implies a state of tension and disequilibrium, and a direct relationship exists between the individual's motivation and the degree of emotional tension which attends failure to attain his goals This tension is least when (a) the net vector strength of his motives is low (perhaps because the needs involved are minor or are frustrated only to a minor degree, because all the possible goals are relatively unattractive, or because there are incompatible motives competing for attention), and (b) the barrier is such that the original goal—or a suitable substitute—can be attained rather readily Tension tends to be high when the opposite conditions prevail

A person's motivation may be such as to generate either too little or too much tension In the first case, relatively little learning is likely to take place since learning occurs as a result of the individual's attempt to avoid or reduce tension In the second case, anxiety may be so intense as to result in a disorganization of behavior, relatively similar to experimental neurosis in laboratory animals, as exemplified by the explosive behavior which sometimes occurs in the classroom as a result of keeping children at a frustrating task [2] The school's responsibility, then, is that of keeping motivation at an optimal level in order to promote maximum efficiency in learning As we have seen in Chapter 2, the school needs to avoid the complete lack of tension which is reflected in indifference to schoolwork and in irresponsible behavior While, at the other extreme, it needs to avoid generating excessive levels of anxiety which result in such detrimental effects as a downgrading of the self-concept, an alteration of the self-concept to exclude anxiety-producing areas, or neurotic behavior patterns characterized by either such an overconcern with avoiding the anxiety that the individual is left no time or energy to deal with the problem or by compulsive overachievement It should also be noted in the latter case that, since the individual under threat loses the flexibility

[2] Such displays of anger lead only to counter aggression and to feelings of guilt and do not deal with the basic problem They would be more common except for the fact that the child protects himself from undue tension by re-orienting himself away from those goals which he has difficulty in attaining

that is needed to handle complex relationships, his accomplishments are more likely to be in the area of meticulous attention to details on a routine job than in areas involving originality and ingenuity Maintaining such an optimal level of motivation is among the teacher's most delicate and most important tasks

FUNCTIONS OF MOTIVES

We have seen that behavior does not just occur but rather that it arises in response to the motives of the individual This view is best expressed by Tolman [395] whose theory of learning hinges upon the proposition that behavior is purposive, i e , directed toward goals considered by the organism as capable of satisfying his needs, but all theories of learning, either implicitly or explicitly, acknowledge the importance of motives in determining the individual's behavior It is generally agreed that motives serve three important functions

They energize the organism The tension which accompanies the frustration of a motive will not only lead the organism to activity in an attempt to satisfy the motive but it will keep him active till the goal is attained and equilibrium is restored An experimental animal, for instance, will generally lie down whenever his needs are reasonably well taken care of but he will not only become restless and active when his needs are unsatisfied but, within limits, this activity will tend to be proportional to the degree of frustration of his needs, or more correctly, to the strength of his motives

They direct behavior toward a goal The activity of the motivated organism is not random but rather oriented toward a goal through the attainment of which he hopes his needs can be satisfied, and when an obstacle prevents his ready access to the goal, he may go to great lengths to attain this goal or a reasonable substitute Thus, a person suffering from an intense need, say thirst, will find his whole behavior oriented toward obtaining water his thoughts, his perceptions, and even his dreams will tend to center around water and how it can be obtained [3]

They select and emphasize the correct response Since motives persist until the motivating condition is satisfied, it follows from a statement of the law of effect that those responses which lead to the satisfaction of motives will be learned while those not leading to such satisfaction will only serve to increase the tension and force the organism to keep

[3] Unsatisfied motives are so fundamental to the determination of behavior that they serve as the basis for the interpretation of projective techniques Thus the rejected child will tend to respond to the various cards of the Children's Apperception Test in terms of acceptance and rejection

trying Thus, the motives that energized the organism in the first place and directed its behavior toward a certain goal also determine what behavior will be learned

Motives always exist in the individual since he always has numerous unsatisfied needs, particularly in the area of the psychological needs which are relatively unsatiable Thus, our task is not to motivate the student not only can that not be done since motives are within the individual but it is not necessary since the individual is always motivated All we need to do is to provide suitable goals through the attainment of which he can satisfy the motives he has we might, for instance, encourage him to do well in algebra as a means of satisfying his motives relative to group approval and self-esteem

Motivation in the Classroom

Motivating children with regard to schoolwork calls for a thorough understanding of both psychology and education so that the material of the classroom can be related to the child s goals and purposes Because of the complexity of the child, the experiences he has encountered, the self-image he has formed, and the ways he has found effective in satisfying his needs, any generalization reached on the subject is likely to be an oversimplification Rules are, therefore, to be avoided motivation has to be an individualized affair involving a consideration of the effect of any given motivational device in terms of the individual's needs and purposes or his self-concept in relation to the situation in which he finds himself In fact, nowhere does the concept of the whole child apply with as much force as it does in the area of motivation For instance, whereas a good report card might be an effective motivational device for most children, it might be looked upon as something to be avoided by a child from the lower class since it might not only conflict with his sense of values but might even cause his rejection by his parents and peers

NEED FOR MOTIVATION

Whereas questions have been raised on this point, it is generally agreed that learning—at least in the usual learning situation—cannot take place without motivation, and, further, that the effectiveness with which learning takes place is in direct proportion to the motivation of the individual (at least up to the point where too intense a motivation may cause a disruption in the learning process) It is true that, at times,

the operation of the motive is difficult to detect but, whenever learning takes place, there must be some motivation, conscious or unconscious, because if there were no motivation, there could be no obstacle to the satisfaction of the motivating condition and, hence, no learning in the sense of the modification of behavior This might explain why the child is often able to recognize cars by make and by year while the average adult is rarely sufficiently interested to do so By the same token, it is no more unusual that the child should be ignorant of the spelling of a word he has just read than it is that the adult should fail to recall which president's portrait appears on a one-dollar bill or the number of steps in a flight of stairs he uses constantly It is all a matter of one's motivation

The teacher need not worry about creating motives in the learner His task is to capitalize on the many motives always present in him and to harness them toward the attainment of desirable objectives The most basic human quality is an inborn urge and drive to push one's development and self-realization to their limit people want to do things for themselves, to be somebody Children are no exception they enjoy working through challenges toward greater competency and, unless they have been too severely hurt by past failures, they can be depended upon to propel themselves forward with a minimum amount of encouragement from the teacher All the teacher needs to do is to provide guidance to their efforts at self-enhancement

When the child in the classroom sees a real use in the material presented in terms of the satisfaction of his needs and the attainment of his goals and purposes, there will be no problem in "motivating" him, for he will work with enthusiasm, initiative, and perseverance—and coercion and the desperate juggling of incentives as well as endless repetition will no longer be necessary Unfortunately, much of what the child is made to do in the classroom does not have, in his estimation, much bearing on anything anywhere but in the classroom and the examination This is particularly true of the high school where much of the subject-matter is relatively abstract and remote from the student's immediate purposes —and even more so in the case of the traditional high school where too often the curriculum is based on adult motives and goals with a heavy reliance on drill Under these circumstances, the teacher often has no alternative but to rely on various extraneous means of coercion in order to promote any learning Even today much of the training in English, for instance, does not seem to relate to out-of-school communication Furthermore, the high school student is likely to have so many more competing interests and so much greater ability to satisfy his needs in other ways that are more fundamental to him that often schoolwork be-

comes a very secondary matter Teachers often work valiantly trying to teach children things for which they have no particular interest in learning If, somehow, the child could be encouraged to bring to the classroom the same enthusiasm as he brings to the playground or to his hobbies, the teacher's problems in the area of motivation would be solved

To be effective, the curriculum must not only relate to the child's needs but must be made sufficiently dynamic that it will be able to meet the competition of the other activities bidding for his attention One might even go as far as to say that generally, although not always, he should not be expected to learn anything which he has not been shown to be meaningful in terms of his goals and purposes When exceptions to that rule occur, it should be easy enough for the teacher to capitalize on such crutches as the average student's desire to please his teacher—and even on firmness—to carry him over such humps, but when used as a steady prop to push over useless and meaningless material these devices soon lose their effectiveness!

NEED FOR EFFECTIVE GOALS

The teacher is not always effective in selling to the child what, from an adult point of view, he sees as desirable, especially since the child has often been conditioned against anything teachers have to suggest and since, furthermore, he generally has other purposes and goals so much more pressing than those connected with schoolwork Faced with such a situation, the child often compromises by working for a grade or the avoidance of punishment as at least something he can salvage out of an otherwise relatively useless activity

The problem of making material meaningful to the student is particularly acute when dealing with children from the lower class whose needs and values are often so different from those incorporated in the curriculum Teachers belong almost exclusively to the middle class and hold the typical middle-class view of education as a means of improving their status They often forget that their value system is not universally accepted and assume that the child will want to learn to read, to get good grades, and to please the teacher when, actually, he has no such desire And to sell him on these values is no easy matter for they conflict with his present system of values and those of his social group Behavior results from one's attempt to satisfy needs and, whereas needs do not differ appreciably from person to person, the specific goal one sets for oneself and the behavior displayed may vary greatly with differences in background Teachers need to know more about each individual child—his background, his motives, values, and purposes—if

they are to be successful in relating the curriculum offerings to his needs
It may even be necessary that special curricular offerings be provided
for him or that he be guided into certain courses Thus, relating school-
work to the purposes and needs of the individual child often requires
the cooperative efforts of the administrator, the curriculum maker, the
academic advisor, and the teacher

Since behavior is directed toward goals, it is necessary not only
that the material be made meaningful in terms of the child's purposes
but also that he be made aware of what the goals are, how they fit in
with his purposes, how they can be attained, and how progress toward
them can be evaluated Often a child does not improve in composition,
for instance, because he does not see a real purpose in improving nor
does he see how his attempts can be improved The teacher is often more
concerned with pointing out errors than in showing him how he could
have turned out a better product and, when models are used, they are
often too far-fetched and removed from his present level for him to profit
from them In the same way, the child going through the book page by
page is not too likely to be aware of the goals toward which he is pro-
ceeding

In order for goals to be effective, particularly in the case of young
children, they must be broken down into smaller and more immediately
atttainable subgoals Although some reinforcement might be derived from
the long-term goals and these may, at times, be sufficient in themselves to
carry some people through a considerable amount of work, the average
child needs periodic reinforcement in terms of his immediate needs In
fact, each phase of the work must provide its own satisfaction if effective
learning is to take place, and it is unrealistic to expect comments such
as "You'll need this when you go to college" to be effective in motivating
junior-high-school students, for example

Habit motives are of special importance here for they will carry the
child through many tasks which the teacher has to have him learn even
though they may not provide immediate satisfaction Once established,
such habits supply their own motivation, the power of which can be
judged from a consideration of the motivation of the smoker, the gambler,
or the alcoholic An interesting aspect of habit motives is that, while they
develop in connection with the satisfaction of some need, they soon be-
come attached to the self and not only become independent of the original
need and function as a motive of their own, but they may actually be-
come much more powerful than the need with which they were originally
associated Thus, the child who does good work as a means of satisfying
his needs of social recognition and self-esteem may reach the stage where

he will insist on work being well done for its own sake and may become quite perfectionistic about relatively trivial details On the other hand, the same comments apply to bad habits in which case the need for remedial work is obvious In fact, habits, good or bad, may be dangerous in that they lead to some satisfaction and, thereby, prevent exploration into the more adequate ways of behavior which become possible with increasing maturation and experience

Interests are closely related to habit motives in that they are acquired as a result of satisfying experiences in a given activity and, once established, tend to perpetuate themselves as long as they are effective from the standpoint of the person's goals and purposes They are, therefore, related to such factors as age, sex, and background Thus, interest in love stories blossoms in adolescence and tends to die off as the person finds more appropriate ways of satisfying his need for love Similarly, the child's interest in "cops" may reflect a need for mastery and self-assertion at a time when he is most dependent upon others, just as interest in sports provides for those needs as he becomes older only to decline—at least from a participation point of view—as the adult finds other interests more appropriate from the viewpoint of his increasing age

The fact that the school must relate school experiences to the motives and purposes of the child does not mean that it must orient those experiences toward his present interests and let him choose his curriculum, for instance On the contrary, one of the school's primary responsibilities is the fostering of new purposes, new motives, and new interests, and the teacher who criticizes students for not being interested might well remember that there are no primary motives, no natural interests that lead a child to study history the only innate aspect of the situation is his capacity for growth His present interests and purposes, being based on limited experience, tend to be narrow and oriented toward the trivial, but even though temporary and perhaps silly, they are very real to him and can be used as a wedge to pry him toward more worthwhile goals Thus, an interest in model planes can be used as the take-off for developing an interest in airplanes, in mechanics, or in science in general And, in the meantime, it can serve to promote learning at his present level

The teacher must remember, however, that satisfaction is a necessity in the development of interest (just as interest is a necessity in promoting success and satisfaction) Many a child has failed to develop an interest in reading because of failure either to master the techniques of reading (perhaps because of excessive difficulty) or to get satisfaction out of

reading (perhaps because of undue simplicity or uninteresting content)
It should also be noted in passing that meaning is an important aspect of
motivation without the challenge involved in discovering the relation-
ship between the old and the new, the ego-involvement that may cause a
person to become interested is not likely to develop it is rather too much
to expect him to generate any great interest in nonsense material, for
instance This, of course, bears directly on the disinterest in schoolwork
often found among duller children

Of course, not all material can be made interesting There are things,
obviously worth teaching, that do not carry immediate interest to stu-
dents, or at least to all the students The fact that girls mature faster than
boys and that, even among girls and boys, there are wide variations in
the rate of maturation as well as difference in intellectual and experien-
tial background makes it difficult for the teacher to find material of in-
terest to all To make matters worse, there is a mistaken view on the part
of some students that they must be entertained, that responsibility for
their education lies with the teacher, and that they should be free to
reject anything that is not breathtakingly interesting to them They cast
teachers in the role of comedians hired for the purpose of telling a few
stories, emphasizing the sensational, and giving easy grades[1] So often
even college students complain that they are not learning a thing from a
given course because the instructor is "so dull ' It should occur to them
that a serious attempt to learn something about the course on their own
could not only give them a good grasp of its content but might also induce
an interest in the field The present lag in enrollment in courses in mathe-
matics and some of the sciences may well be related to their lack of
appeal to students who fear they might have to work too hard to enjoy
them To be sure, the fault is not always with students in too many
cases, the distaste for certain subjects stems from the dry and uninterest-
ing way they are presented as well as from the inappropriateness of the
content from the standpoint of pupil goals and purposes

A number of studies have been conducted on the various phases of
the interests of school children Reading interests have received particular
emphasis and rather detailed analyses of such interests tabulated with
respect to age, sex, and intellectual and cultural background are avail-
able but, in view of their complex nature, the results will not be discussed
here Suffice it to say that consideration of these results by curriculum
makers and teachers is essential if the school is to promote effective
learning

[1] Teachers often rise to the bait, emphasizing the dramatic, telling stories,
minimizing standards, and generally concentrating on being popular

Incentives

Incentive are objects or conditions which have possibilities in terms of satisfying motives and which, therefore, become goals toward which behavior is directed Hence, their effectiveness in directing behavior is propoitional to the expectations they hold for the individual fiom the standpoint of his motives Thus, whereas food would be a powerful incentive to a hungry person, it would have no incentive value to a person whose hunger was completely satiated An incentive may also deiive its effectiveness from being something the learner wants to avoid, e g, punishment, and Lewin [236] has borrowed the term *valence* fiom the field of chemistry to refer to the net strength of an incentive on an attraction-avoidance continuum Of course, the valence of a given incentive varies from person to person and from time to time in the same person in keeping with the fact that corresponding variations occur in motives The picture is fuither complicated by the fact that the organism's behavior is always affected by a multiplicity of unsatisfied needs and that a given incentive may have positive valence with regaid to one motive and negative valence with regard to another Thus, good grades are attractive from the standpoint of satisfying one's need of self-esteem, but peihaps not so attractive from the standpoint of belonging if the other children in the class resent a *brain* Incentives also act in combination the child may not only be attracted by the good grade but also be pushed in that direction by fear of punishment if his grades are low What behavior will result from the conditions of a given situation will be deteimined by the net valence of the various incentives as determined by the nature and strength of the motives involved in relation to the realities of the situation

Incentives may be *intrinsic*, i e, inherent in the activity itself as in the case of the person learning to play an instrument for the esthetic pleasure which he derives from playing, or *extrinsic*, i e, external to the activity as in the case of the child learning algebra in order to get a monetary reward from his father Actually the distinction between intrinsic and extrinsic incentives is often relatively difficult to establish Thus, running and playing for the sheer pleasure of muscular ielease would involve an intrinsic incentive, but the minute a person tries to outrun others—and thereby satisfy his need for social approval—the incentive is extrinsic, for he has ceased to play and begun to compete In many cases, an activity

involves both intrinsic and extrinsic incentives Thus, a teacher may enjoy working with children but still appreciate being paid

It might be noted in passing that extrinsic incentives are not artificial they may be connected directly with the activity as are grades and performance in algebra, or connected only indirectly as is a monetary reward for achievement in school, but incentives, even though extraneous to the activity itself, cannot be extraneous to the motives of the learner If they were, they would not be incentives

INCENTIVES IN THE CLASSROOM

Whereas the true motivation of the child must hinge upon the satisfaction of his motives, the teacher can use many incentives to stimulate him to action, i e , to tap the motives which he already possesses Thus, as has been stated, incentives derive their effectiveness through their potentiality in satisfying motives, but the real motivation lies in the child and the teacher must learn to think, not in terms of incentives, but rather in terms of basic motives and the way they can be satisfied in the course of the child s doing what the school thinks it is worthwhile for him to do The teacher needs to know the motives of the child and the incentives to which these motives respond, for if the child can be led to find satisfaction for his needs in doing the classwork expected of him, there will be no need to jiggle artificial incentives before him Indifference to schoolwork, misbehavior, and the like will then cease to be problems

A certain amount of the trouble teachers have had in the past in motivating children in the classroom has stemmed from too exclusive a reliance upon extrinsic incentives Thus, too many teachers rather than concentrate on making their subjects interesting, challenging, and satisfying from the standpoint of pupil needs and purposes attempt to force learning through punishment and rewards which are only artificially related to the activities of the school This is not to imply that extrinsic incentives have no place in the classroom all that is meant is that extrinsic incentives have definite limitations that need to be understood by the teacher if he is to use them effectively Thus, they can be ineffective and even harmful under the following conditions

[a] When they stem from the authority of the teacher, rather than from the relationship between the task and the goals of the learner

[b] When they are overemphasized to the extent that they become desirable in themselves to the exclusion of the real goal Thus, grades often become so important to students that it is no longer a question of having learned anything but rather of having obtained a good grade, even

if that calls for cheating as a way of avoiding the effort required to learn Under these conditions, grades actually impede learning by forcing students to study, not what is important, but what is likely to be covered in the test Furthermore, while they do promote some learning, learning ceases the minute the incentives are removed Hence, the desirability of placing activities on a self-sustaining basis through the cultivation of habit motives and the reliance upon intrinsic incentives

[c] When they are effective for only a small fraction of the class Thus, the gifted child can generally attain success, praise, and other incentives without too much exertion, while the dull child cannot even come close to any of these, no matter how hard he tries, so that he must look elsewhere for the satisfaction of his needs However, in order to do that, and still maintain a consistent self-concept, he must reject those values for which the school stands which, of course, means that he is no longer subject to the beneficial pressure which the school as a social agency should exert upon him for the good of all

[d] When they lead to emotional disturbances When there is but one prize or one reward, it automatically means that all but a small minority of the class are bound to be disappointed (The small minority consists of the winner and those students who, sufficiently convinced that they are not in the running, have ceased to care) Under such conditions, incentives are not only ineffective, they are definitely harmful from the point of view of the child's maximum self-realization which the school is trying to promote

However, there are times when one has no alternative but to rely on extrinsic incentives They are acceptable [a] when they are used to start an activity on a self-sustaining basis (or perhaps to reinforce the reward inherent in the activity) It is obvious that any new activity can be motivated through the operation of intrinsic incentives only after the child has actually tried the activity at least once under rewarding conditions, after which time, the activity can supply its own reward and the incentive can be removed Likewise, there is certainly nothing wrong with praise as an incentive added to the natural satisfaction the child gets out of work well done [b] when the activity can never be on a self-sustaining basis Certain activities, such as garbage-collection, will probably always have to be motivated extrinsically In the same way, arbitrary associations having no inherent stimulation value cannot be self-motivating and have to depend on extrinsic incentives

Intrinsic incentives are probably best Yet extreme opposition to the use of extrinsic incentives is not warranted and, as early as 1935, Thorndike [387] pointed out that the advantages of intrinsic over extrinsic

motivation had been exaggerated This opinion has found support in such studies as that of Symonds and Chase [377], for example, in which the group extrinsically motivated through tests was found to make nearly five times the gains of an intrinsically motivated group and six times the gains of a third group stimulated by no particular incentive Perhaps, rather than make a sharp distinction between the two, the teacher might be well advised to concern himself primarily with the cultivation in children of interest in school activities and the development of a self-concept oriented toward schoolwork as an important avenue to maximum self-realization but also to make judicious use of extrinsic incentives to reinforce intrinsic rewards and thus ensure the harnessing of the motives of the child in the direction of the activities which will promote such self-realization

REWARD AND PUNISHMENT

Since every response of the motivated organism is either rewarded or punished depending on whether or not it serves to attain its goal, probably all incentives can be included in the broad category of reward and punishment Thus, one might group in one category the positive aspects of motivation (e g , reward, success, praise) and into the other category the negative aspects (e g , punishment, failure, reproof) In general, the former tend to be more effective in promoting learning than the latter but the evidence is not entirely clear This is not surprising in view of the many complicating factors involved It is impossible to know, for example, what constitutes reward and punishment for a given person Actually, *reward* and *pun shment* refer to relatively super ficial aspects of the situation the more fundamental aspects of motivation concern motive satisfaction and tension reduction and these can be considered only from the point of view of the individual himself and not from the objective standpoint of the outside observer In practice, it is probably best to think of reward and punishment as complementary aspects of the appeal to motives of the individual which enable him to be both pulled and pushed into doing what it is worthwhile for him to do

Despite the fact that punishment is perhaps the most common motivational device used by some teachers, not only is it essentially negative but it very often worsens the situation it is meant to improve, and it can be very harmful to the child This does not mean that punishment should never be used but rather that it should be used judiciously with full awareness of its dangers and limitations Thus, among the major objection to punishment, the following might be considered

[a] Punishment may, at times, be effective as a disciplinary measure in stamping out undesirable behavior (it may be acceptable as a deterrent to the child's touching the stove or crossing the street), but it fails as a motivational device in that it does not direct behavior unless it is accompanied by some positive guidance Thus, giving a student a grade of *F* does not show him how to improve his performance Furthermore, punishment may actually fixate the wrong response in cases where the individual is prevented from reaching the correct response and having it rewarded

[b] Punishment is likely to arouse anxieties which will not only make learning less efficient but will also cause the individual to cease trying It may actually be a distraction that interferes with learning and when it is too severe or too unavoidable it may result in tunnel vision in which the individual, rather than face the uncertainty of a novel approach, simply repeats the same incorrect response and takes the expected punishment When punishment is used over a long period of time, it is self-defeating, because it destroys the child, causing emotional disturbances and a disorganization of the learning process or forces him to alter his self-concept so that he no longer cares whether he improves or not

[c] Punishment is likely to result in resentment and antagonism which will destroy teacher-pupil relationships to the point where the teacher no longer has the child's confidence which he needs in order to promote his growth He may still effect some academic learning, but it will have to be under duress and at the expense of the other aspects of his development This is especially so inasmuch as very often the teacher gives punishment more by way of revenge for feelings of exasperation or as a way of relieving his own tensions than for the purpose of promoting pupil growth For this reason, as we have discussed in connection with discipline, the best type of punishment may be that which arises out of the natural consequence of the act since it does not cast the teacher into the role of Chief Executioner, but rarely is such natural punishment sure or immediate enough to be effective and often it is too drastic And, of course, for a child to fail a grade because he didn't try is hardly a natural consequence of his behavior since the teacher still has a hand in deciding what constitutes passing and failing—and the child knows it

SUCCESS AND FAILURE

Although the effect of failure may vary considerably with such factors as the security of the person involved, research has shown rather clearly that people reach new heights as a result of their success in meet-

ing challenges and that they reach new lows as a result of their con-
tinued failure In a study by Seashore and Bavelas [327], for example,
in which children were asked to draw a man, then to draw a *better* man
(implying that the previous drawing had been inadequate), it was found
that the performance of more than half the children worsened rather
than improved Similarly, scholastically successful students have been
found [225, 230, 320] to improve on the subtests of the Wechsler and the
Stanford-Binet tests of intelligence while scholastically unsuccessful
students did more poorly Likewise, in a study by Postman and Bruner
[299], the group that had been frustrated by inability to keep up with
the speed at which pictures were flashed on a screen did more poorly than
a control group when confronted with the simple task of perceiving
three-word sentences presented at a reasonable speed

The effects of failure can be considered only from the standpoint of
the self-concept discussed in Chapter 2 Most people want to think of
themselves as capable When first faced with failure, the individual is
likely to redouble his efforts in order to maintain a consistent self-image
When faced with consistent failure, however, he cannot help but lose
in self-esteem as a result of the relatively greater success of others and
the unfavorable comparisons he makes, or which are made for him He
is, thus, forced to alter his self-image and having conceived of himself as
incapable in a given area—or as a failure, if his failure covers a long
period of time and a number of areas—he proceeds to live up (or rather
down) to this self-concept and, thereby, confirms his views of being in-
competent

Since many cases of learning disabilities (such as the case of the
nonreader) are very often due to continued failure resulting in a nega-
tive self-concept, the teacher should be particularly careful that early
contacts with a given activity be successful Thus, he can set the stage
for success through providing readiness exercise, setting clear-cut goals,
giving the child evidence of his progress and by not expecting too much
too soon It may even be necessary for the teacher to find areas which
matter to him and in which he can be successful

The child whose self-image is one of confidence will be able to do
better than one who views each new situation, not as a challenge, but as
the occasion which will prove once again that he is a failure And to
allay the fears of those who might wonder if the absence of failure might
not develop a spoiled and spineless individual unable to meet any form of
crisis, it can be said without fear of contradiction that success is a better
preparation for both success and failure than is failure Furthermore
there will always be a sufficient number of failures to strengthen the

moral fiber of the individual, especially as success tends to develop secure individuals who are not afraid of tackling difficult and challenging tasks There is nothing wrong with the occasional failure, but it can do definite harm to the child when it results in his feeling that he is unworthy or in his being less capable of dealing with future challenges

Just what is success and what is failure, however, depends on one's level of aspiration, i e , the level of achievement which the person sets for himself as a goal to achieve Thus, success and failure are not absolute terms based on actual attainment but rather are meaningful only with reference to the target which the individual, by virtue of his self-concept built up on the basis of his past experiences, has set for himself Thus, if a student has his sights on an *A*, anything less than an *A* constitutes failure, while if he were looking for a *C*, he would be successful if he obtained the *C*

If the individual sets his expectations too high with reference to his abilities, he is bound to experience unnecessary failures, whereas if he sets his goals too low, he may get relatively undeserved successes while denying himself the opportunity of trying for greater achievement An interesting aspect of the concept of aspiration was brought out by Sears [326] who found that success tended to lead the individual to set appropriate goals, whereas continued failure led him to set goals that were unrealistically low (apparently in an attempt to ensure success) or to persist in goals that were unrealistically high (apparently in a desperate attempt to maintain a self-concept of himself as capable) Teachers, particularly in the primary grades should encourage the child to understand that success from an objective standard, is not equally attainable and to develop a realistic level of aspiration This means that the standards of achievement set by the teacher should be individualized to fit the ability level of the child and that generally both overachievement and underachievement should be discouraged, for, if children can be led to strive for realistic goals, artificial incentives may become relatively unnecessary since the satisfaction which they would derive from the activity would be sufficient to put it on a self-sustaining basis

Other incentives such as praise and reproof, reward and punishment have a direct bearing on the present discussion inasmuch as they serve to emphasize success and failure their value and limitations, therefore, have to be considered in the light of the present discussion This also applies to the knowledge of results Panlasigui [292] found that knowledge of results proved an effective motivational device for the top three-quarters of the class However, if knowledge of results can point out success, it can also point out failure and, for the bottom quarter, it did

not lead to an increase in achievement The last part of this sentence needs to be emphasized for the benefit of teachers who seem to believe in the magic power of giving students low grades. such a procedure is almost sure to be self-defeating for low grades as a motivational device operate on the assumption that individuals work harder when their short-comings are emphasized, an assumption which the theory of the self-concept as well as empirical evidence refutes

PRAISE AND REPROOF

Early studies [189] had shown praise to be superior as a motivational device to reproof which was, in turn, more effective than being ignored Research [381] has also shown reproof to be relatively more effective with boys than with girls, with the bright than with the dull, and with the extrovert than the introvert But there is not complete agreement on these findings Schmidt [322], for example, after reviewing the evidence on the subject, came to the conclusion that there is no basis for the claim that praise is more effective than reproof, a conclusion which is understandable when one considers the role played by such interpersonal relations as the liking of the teacher by the pupil Thus, a student may see praise from a much-disliked teacher as punishment and reproof from this teacher as rewarding from the standpoint of the resulting gain in peer status Likewise, a distinction needs to be made between constructive criticism given by a friendly teacher in a spirit of helpfulness and the vicious abuse sometimes showered upon students by frustrated teachers Constructive criticism is essential for effective pupil growth but little good is likely to result from a situation in which the child, because of insecurity, the way the criticism is given, or the person giving the criticism, feels compelled to shut himself off from attack in order to protect his self-image

Teachers, in common with people in general, believe in praise to a greater extent than they do in reproof but in practice they tend to use reproof more often than praise Of course, there is much unspoken praise but still teachers would do well to remember that achievement without recognition is relatively unsatisfying Praise should, of course, be given judiciously and without an air of flattery, but it should be possible to find, in the course of the school day, numerous occasions deserving of honest praise It is also important to note that, whereas praise tends to be cumulative in its effects, reproof, if overdone, soon loses its effectiveness and probably nothing could be as senseless from a motivational point of view —as well as harmful from a mental hygiene point of view—as the constant berating of students

COMPETITION

Competition as a device for getting more work out of a class is assumed to be relatively effective for it subjects the individual to the full force of group dynamics, the most fundamental and powerful motivational influence available However, it suffers from the very serious limitation that not all can win in competition and that the winner in such competition is often not the person who has exerted himself most Thus, it serves to give easy success and recognition to a few who don't appreciate it because it was too easy, while it results in frustration and harm to the many who tried but who finally had to give up in order to maintain their status and self-respect Therefore, in the final analysis, overemphasis on competition very often leads to poorer performance on the part of the group as a whole Unless reinforced by coercion, it almost invariably leads to indifferent performance on the part of the weaker students who cannot afford to try when a person continually encounters failure, the line of least resistance—and despite the virtue of persistence, the most intelligent—is to stop trying Generally speaking, competition is part of the autocratic pattern of classroom management and very often leads to a need for further autocratic measures A more enlightened approach would be to place the emphasis on personal growth on dealing with problems more effectively rather than upon gaining superiority over the next person

, Without getting involved in the argument as to whether competition is more innate than cooperation or whether in our culture competition is so basic that a child may as well get training in how to meet it, one should point out that there is no justification for forcing the child into competition in which he can only lose It should also be noted that certain teachers make their classrooms much more competitive—with the degree of success relative to that of others much more obvious—than would be encountered out of school, for in everyday life, if one cannot stand the competition he can always withdraw But the child in school does not have that privilege While a judicious use of competition may increase interest in classwork, it is essential that this competition not be of the dog-eat-dog variety and .that it be fair, so that everyone has a chance of winning

· There is evidence to suggest that individual competition is more effective in promoting gains in learning than is group rivalry which, in turn, is more effective than group cooperation Thus, Sims [342] found the individually motivated group to make a 34 7 percent gain as opposed to 14 5 percent for the team motivated group and 8 7 percent for the

group with no special motivation Similar results were obtained by Leuba [234] and by Maller [252] However, it is likely that the results of such comparisons would vary with such factors as the nature of the task, the personality and experience of the participants, the cohesiveness of the group, and the extent to which the members realize that their personal interests center in fostering the attainment of group goals

Regardless of its effectiveness in promoting learning, however, the more important question is the effect it has upon the participants As we have seen, competition may lead to a lowering of the individual's self-concept or to an attitude of indifference to schoolwork as a means of reconciling poor performance with his concept of being competent It also seems reasonably clear that an overemphasis on competition will tend to result in a destruction of group loyalties and of the child's capacity to cooperate and that it will tend to cause resentment, jealousy, and poor intragroup relations—in fact, it will negate the values for which the school and democratic society stand However, this does not imply that competition is necessarily bad like many other incentives, it does have its dangers and limitations but much of the criticism of competition has been directed at its abuse rather than its use and the position taken by Jersild [130] in the following quotation appears both educationally and psychologically sound

> From an educational point of view, the proper attitude toward competition is not to deplore it on general principles, nor to try to stamp it out by grudging rewards to those who are deserving nor by placing a handicap on those best able to achieve The practical attitude rather should be to turn competitive impulses into the most constructive channels, to avoid emphasis on ulterior or artificial rewards, to provide each individual as far as possible with opportunities that are commensurate with his abilities, to provide opportunities for children with different types and degrees of ability to have a taste of achievement, to prevent inequalities in the rewards for useful service, and to avoid a policy of continually placing children in competitive situations in which they are bound to fail

Competition needs to be used cautiously and, in general, the less personal the rivalry, the less dangerous it becomes Thus, group rivalry tends to be less intense and less harmful than individual rivalry although here too teachers need to be careful lest such rivalry assume the proportions of gang warfare It is also to be noted that generally group rivalry should not pit the boys against the girls, for such a procedure could easily interfere with the necessary heterosexual adjustment to take place

in adolescence The often repeated idea that children should be encouraged to compete against their own record rather than against others is probably psychologically sound but it does pose a problem in terms of the mechanics of doing this when dealing with learning measured on a displaced cardinal series Thus, a student who gets a 70 on the first test or who stands at the 75th percentile would have difficulty in deciding what to get on the next test in order to compete against himself This problem has been mentioned in connection with learning curves (Chapter 9) and will be discussed further in Chapter 14

Role of the Teacher in Motivation

Inspiring children to use their potentialities for maximum self-realization is obviously the most important task facing the teacher for, in the last analysis, it is he who is the key to the motivation of children in the classroom It is particularly important, therefore, not only that he understand children and the ways in which they can be motivated but also that he be the type of person they can accept and by whom they can be inspired What this involves cannot be listed in terms of a number of specific rules, procedures, and characteristics for it implies all that the teacher is and all that he does as it affects the children in his care, but if separate mention had to be made of certain qualifications, sensitiv tv to children's needs and ingenuity in harnessing their motives in the direction of desirable goals would be among the more important In terms of specific details, it means the teacher will have to provide moral support to the child who is frustrated by the demands of the school, a change of work for the child who is bored, special projects for the child whose interests and purposes have not yet been tapped by the school's routine He will have to keep a nice balance between difficulty and ease of the material so that the child will neither be bored nor frustrated and this he will have to do not only for one child but for some thirty to forty children, each of different ability, interest, and background He will have to get children to learn material for which they have no great interest and to have them develop those interests, relying in the meantime on his personality and his prestige as a friend and as a person who is concerned only with their welfare

That the classroom is a social group is a fact whose fundamental importance from the standpoint of motivation the teacher must appreciate, for, as discussed in Chapter 5, the group exerts a powerful influence upon

its members to conform to certain group values If, therefore, the class can agree with the teacher on mutually acceptable goals, the pressure of the group upon the individual to contribute toward the attainment of these goals will insure the motivation of the individual members Under such conditions, the teacher's task will be one of selling the group on certain goals and of maintaining the cohesiveness of the group so that members remain subject to group influence Such an approach is not without dangers, of course If antagonism exists between the group and the teacher in terms of personality and/or goals, social pressures can just as easily be exerted toward having the members do poorly Thus, since social reinforcement is probably the teacher's greatest ally or enemy in motivating children, he needs to pay particular attention to promoting a high classroom morale and to working through the group in orienting students toward worthwhile objectives This would imply, for instance, that instead of overindividualizing classroom work, he should encourage group participation and cooperation in the attainment of common goals, for, under these conditions, the individual's concern is no longer over satisfying his individual needs but rather over integrating his needs with those of the group so that group goals are accepted as individual goals and the individual derives satisfaction for his needs through the achievement of the group as a whole

HIGHLIGHTS OF THE CHAPTER

The problem of motivation in the classroom is one of the more troublesome aspects of teaching Part of the difficulty apparently stems from a lack of understanding on the part of the teacher of the why of human behavior as it applies to the child and the schoolwork which he is expected to master The following are among the major points with which he should be familiar if he is to be successful in the area of motivation

[a] Motivation stems directly from the concepts of needs, the self and the phenomenal field as discussed in Chapter 2 and incorporates not only an energizing of the individual but also an orientation of his behavior toward the attainment of certain goals as potential satisfiers for his needs

[b] Not only is learning in the classroom dependent upon motivation but the effectiveness of the learning is more or less proportional to the degree of motivation of the learner

[c] Motives are always present in the child The teacher's task is to use these motives in the attainment of worthwhile educational objectives To be effective in motivating him, he needs to understand him as an individual so that he can relate classroom experiences to his present needs, goals, interests, and purposes while gradually encouraging the development of motives that are more worthwhile

[d] Goals to be functional must be meaningful in terms of the learner s needs and purposes

[e] Many incentives are available to the classroom teacher in his attempt to tap the motives existing in the child They can be understood in terms of *reward* and *punishment*, i e , in terms of whether or not they enable the motivated individual to attain his goals

[f] Many teachers use punishment and fear of punishment as their major, if not sole, motivational device This is unfortunate, in view of the limitations and dangers involved

[g] Success is important from the standpoint of motivation, particularly as it leads to the development of a positive self-concept and, hence, to further success and further motivation Unfortunately, teachers too often use failure as an instrument in a misguided attempt to have the learner improve his work Success is a relative term and the child should be encouraged to develop a realistic level of aspiration

[h] Competition is a powerful incentive since it brings the full force of group pressure to bear upon the learner On the other hand, it is not without its dangers and should be used judiciously

[i] The fact that the classroom is a social group is of fundamental importance since social reinforcement is the teacher's greatest ally or enemy in "motivating" children

[j] The teacher is, in the final analysis, the key to motivation in the classroom

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QUESTIONS AND PROJECTS

1 [a] Evaluate Much of the evidence on the relative strength of the various motives has been derived on experiments with animals and is of questionable value in understanding human motivation since our culture complicates the relationship between the individual's needs and the behavior by means of which they are satisfied

[b] Evaluate Whereas most of the learning the primitive man does has direct need-reduction, if not survival value, much of the learning that is expected in our schools is related only indirectly and, often remotely, to the needs of students

[c] Debate Many of the artificial incentives (e g, stars, grades, honor-rolls, etc, used so profusely in our classrooms are actually detrimental to the long-term growth of pupils

[d] Evaluate The less the teacher has to depend on external incentives" such as grades and punishment, the better the teacher he is

2 What are some of the motivational forces to which teachers might appeal with most effectiveness and with least danger to mental health?

3 Teachers are often criticized for being stingy with rewards How can they deal with the fact that, when rewards become plentiful, inflation destroys their evidence value?

4 Can a subject be made interesting for its   sake?

5 How realistic is it to tell students they should not be working for a grade ?

11

Retention and Transfer of Training

❦

*   whenever we have really learned anything we can transfer
it, and if we cannot transfer what we seem to have learned, we
have not really learned it*

MURSELL [278]

PROBABLY NO OTHER aspect of the classroom situation is more frustrating to teachers and pupils than the extent to which the latter not only forget by tomorrow what they learn today, but even seem unable to make effective use of the knowledge they have in dealing with new situations Because they are closely interrelated, these two aspects of the learning process will be discussed together in the present chapter

Retention and Forgetting

Retention and forgetting are complementary processes, retention referring to the preservation of what is once known, forgetting to the loss of remembrance of it That a great deal of what one learns is soon forgotten is obvious to anyone, and particularly to teachers whose task it is to guide the learning of children It would be even more obvious to them, if they were to check how soon after final examinations are over, students forget some of the knowledge they had at the end of the course Greene [155], for example, found that students who repeated examinations in col-

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lege classes in zoology, psychology, and chemistry four months after the final dropped from an average percentage of 76, 70, and 80 to 42, 42, and 48 Other studies have shown retention losses ranging from 30 percent to 90 percent in periods ranging from three months to three years It is also estimated that the average child, during the summer vacations, forgets perhaps from 10 to 50 percent of the course content which he knew in June, with the degree of forgetting being dependent upon such factors as the functionality and appeal of the content, the method used in teaching and learning the material, and the nature of the learner

However, the situation is probably not as bad as it appears on the surface forgetting is selective and, while in some areas there is an almost complete loss, in other areas there may actually be a gain occurring during a period of disuse Thus, Schrepel and Laslett [323] found a loss in arithmetic computation over the summer vacation but a gain in word meaning, literature, and the social sciences, and Tyler [101] found the ability to apply principles and interpret new experiments in zoology to be equal or better than at the completion of the course fifteen months before, even though no other course had been taken in the interim Furthermore, not only can the forgetting of what we want to keep be minimized but a good deal of what is forgotten is really not overly important in and of itself Actually it would be disastrous if we remembered everything We need details, for instance, to give us a good grasp of the principles involved but, once they have served their purpose in enabling us to go beyond to generalizations, then loss is of no great moment Our memory of the career of Hitler may be rather vague but we still have attitudes, principles, generalizations and viewpoints which are based on the facts of his career even though the facts themselves are gone The importance of facts on the other hand, should not be minimized we need facts as stepping stones to higher levels of understanding and while they are often forgotten and while the mere possession of facts does not ensure insights, generalizations, and principles, the latter would not be possible without facts Yet it is these higher mental processes, and not the facts upon which they are based, which are the important outcomes of education—and these, fortunately, are relatively resistant to forgetting

RELATION TO LEARNING

Contrary to what some people think, ability to learn and ability to retain are positively related This should cause no surprise since these two abilities are really two phases of the same process and a person would be unable to learn unless he could retain, in the process, the things he learns, i e, unless he has immediate memory

Thus, the relationship in question is essentially that between imme-
diate and delayed retention It is true, to be sure, that occasionally a
student will learn something quickly—more correctly, superficially—and
have it fade away almost completely in a matter of days while another
student who takes time to get a good grasp of the topic, with emphasis on
the interrelationship of the ideas to each other and to what he has pre-
viously learned, will take more time to learn but he will retain it longer
Thus, the statement "It takes him a long while to learn anything, but
when he s got it, it really sticks!" has some basis in truth, but what is
being compared in such cases is not differences in retention but differ-
ences in the adequacy of learning When material is learned to the same
degree but one learner takes more time than the other to learn the
material, the differences in retention may not be too great But, when the
practice time or trial is held constant for two learners, as is the case in the
classroom situation, the one who learns faster retains more This may be
explained on the basis of the fact that the procedures and characteristics
which lead to efficient learning also lead to greater retention Thus, learn-
ing quickly tends to imply that [a] the learner has greater intelligence or
background, or both, leading to a greater degree of meaningfulness of
the material, or [b] the learner has effective study habits, has efficient
procedures for organizing the material, or is strongly motivated—all of
which tend to promote retention

MEASUREMENT OF RETENTION

The rate and extent of forgetting was first investigated by Ebbing-
haus His well-known forgetting curve relates to the retention of non-
sense material learned by memorization It does not apply—particularly
from the standpoint of the steepness of the decline and the final level—
to the retention of more meaningful material Yet the general *shape* of
the curve would be relatively the same thus, even though nonsense ma-
terial would show a more rapid and more complete loss than would gen-
eralizations, for example, all retention curves show the sharpest drop
beginning immediately after the end of the learning period followed by
more gradual losses

The steepness of the decline and the final level of retention are af-
fected to a considerable extent by the method used in their measure-
ment a greater degree of retention might be expected, for example, when
it is measured by the recognition method than when measured on the
basis of recall Thus, retention in the case of verbal material can be
measured in any one of the following ways, none of which would yield
identical results [a] ability to recall, e g, the completion type test, [b]

ability to recognize, e g , the multiple choice test, [c] ability to reproduce the material, e g , the essay type test, and [d] the relearning or savings method in which the amount of retention is determined by the effort (measured in terms of time or number of trials) required to *relearn* the material as a fraction of the effort it took to *learn* it in the first place [1]

The steepness of decline and the final level of learning would also depend on such factors as meaningfulness of the material and interrelatedness of its components which, in turn, would be a function of the nature of the material, and the intelligence, experience and motivation of the learner, the degree of overlearning of the material, the amount of review, and other factors which will be discussed in the next few pages

Explanation of Forgetting

The older view among psychologists regarding forgetting—and still essentially that of the layman—was that forgetting resulted from disuse or decay with the passage of time In a sense it is true that, with the passage of time, omissions, alterations, additions, or condensations take place, particularly in points not too clearly understood or not too closely interconnected with the main aspects of the material But the mere passage of time does not explain why forgetting is selective, why we forget certain things and not others, and why we forget in certain situations more than we do in others And, of course, the passage of time does not explain the phenomenon of reminiscence, in which the degree of retention actually goes up and not down with time Thus, in one study [21], 45.5 percent of the material was remembered at the end of one day and 55 3 percent at the end of two days

The modern view is that forgetting takes place as a result of the active process of interference with what is learned by subsequent learnings Thus, the child having learned that $7 + 6 = 13$ is later faced with $8 + 4 = 12$ and he mixes the two to the point where he is no longer sure whether the answer to $7 + 6$ is 13, 12, or any other number In the same way, the average teacher should have no trouble remembering the names of one or two new students but when he is faced with thirty-five all at once, he confuses one name with the other to the point of not being sure about anyone's name This interference of previous learnings by subsequent learnings, first investigated by Muller and Pilzecher [277] in 1900, is generally known by the technical term, *retroactive inhibition*

Although details tend to drop out, forgetting involves more than a

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[1] This method would be suspect when dealing with children if a certain amount of time is allowed to elapse The saving in learning time may then be due to increased readiness

mere loss, subtraction or omission, rather, it is a reorganization, in which
the individual, having lost some of the aspects of the experience, fills in
the gaps from his own background For example, the witness having come
to some conclusion as to who was the guilty party in the accident, but not
remembering the exact details of the impact of the collision, fills in from
his general understanding and says "He came this way" when he really
means "It seems to me he would have had to be coming this way in
order for me to have reached the conclusion I did as to his guilt " This,
of course, does not imply lying any more than it does in the case of the
child who writes that the chemical formula for common table salt is
CaCl The extent to which our memories are colored by our interpreta-
tions is well brought out by the results of a study by Carmichael et al [57]
in which two groups of subjects were shown ambiguous figure stimuli
with different sets of word stimuli As shown in Figure 11 1, the group
which was led to associate the first figure stimulus with the phrase "cur-
tains in a window" tended to draw it as curtains, whereas the group to
which the figure was presented along with the verbal stimulus "diamond
in a rectangle" drew it more like a diamond inside a rectangle

There is also evidence to suggest that some forgetting results from
repression This view, which was emphasized by Freud, has found sup-
port from such studies as that of Frank and Ludvich [120] who found
greater retention for syllables followed by pleasant odors than for syl-
lables followed by unpleasant odors The evidence is not conclusive,
however, and Postman and Murphy [300] express the view that it is the
intensity of the feeling tone, rather than its quality, that affects the ex-
tent of recall

FACTORS AFFECTING RETENTION

A considerable amount of experimentation has been conducted on
the various factors that make for a greater or lesser degree of interfer-
ence However, before we review this evidence, it might be worthwhile
to become familiar with the design of such experiments Since what is
learned is interfered with by subsequent learnings, i e , by the activity
which is interpolated between the learning of the material and its testing,
it is a matter of comparing the relative extent to which performance is
impaired by different activities and conditions introduced subsequent to
the learning of a given set of material Thus, if we want to determine
whether the memorizing of the names of telephone subscribers interferes
to a greater extent with the recall of the names in the student directory
than does the study of English grammar, for example, we would first have
to start with two groups—one could be called the experimental group

REPRODUCED FIGURES	WORD LIST I	STIMULUS FIGURES	WORD LIST II	REPRODUCED FIGURES
	Curtains in a Window		Diamond in a Rectangle	
	Bottle		Stirrup	
	Crescent Moon		Letter "C"	
	Bee Hive		Hat	
	Eye Glasses		Dumbbells	
	Seven		Four	
	Ship's Wheel		Sun	
	Hour Glass		Table	
	Kidney Bean		Canoe	
	Pine Tree		Trowel	
	Gun		Broom	
	Two		Eight	
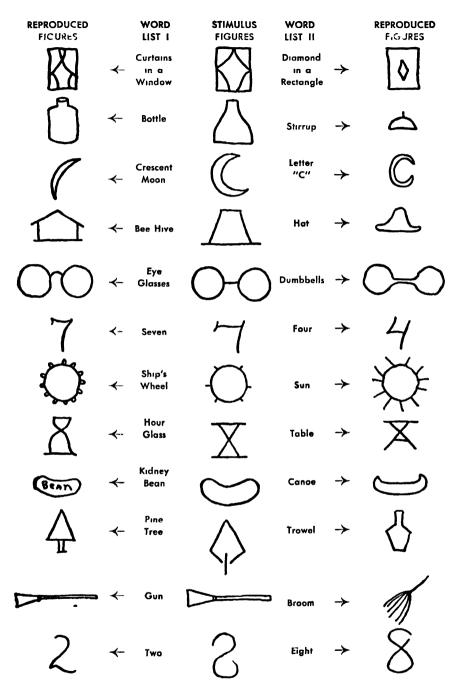
FIG 11 1 *The stimulus figures in the middle column were presented to two groups of subjects with a different word list Later when the two groups were asked to reproduce the stimulus figures, they tended to make them conform to the stimulus word with which they had been presented* From Carmichael et al [57]

and the other the control group—equated in all respects relevant to retention, i e , they would have to be equally familiar with the names in the student directory, they would have to have the same level of intelligence and the same degree of motivation and of skill in memorizing Both groups would then learn the names in so many pages of the student directory to the same degree of mastery, e g , to the point of one correct repetition, after which for a given period of time one group would study the names in the corresponding pages of the telephone directory while the second group studies English grammar Finally, each group would be tested for its retention of the names of students they had previously studied and, if the group that had studied grammar, say, were to display greater retention than did the other group, we could conclude that, to the extent that other things were equal, the study of English grammar causes a lesser degree of interference with the retention of the names of students than does memorizing the names of telephone subscribers In schematic form, the experiment would look like this

	Original *Learning* **A**	*Interpolated* *Learning* **B**	*Test Original* *Learning*
GROUP I (Experimental)	*Learn* List of students	*Learn* List of telephone sub- scribers	*Test* List of students
GROUP II (Control)	*Learn* List of students	*Learn* English grammar	*Test* List of students

Among the factors whose effect on retention have been investigated, we should mention the following

The Similarity of original and interpolated learnings Research evidence seems to supply considerable support for what is known as the Skaggs-Robinson hypothesis [345] which, stated in simple terms, claims that the more similar the interpolated and the original learning the greater the interference *up to a point* As the two become more similar beyond this point, interference decreases and eventually as they become more identical, the interpolated learning actually reinforces the original learning Just where interference begins to decline or where it gives way to reinforcement depends on such factors as the intelligence and background of the learner and the meaningfulness of the material to him Thus, a bright child might find that introducing $(a - b)^2$ after he has just learned $(a + b)^2$ reinforces his understanding of $(a + b)^2$ whereas, in the case

of a duller child, the second example may only serve to confuse his meager understanding of the first Interference would probably be greatest when the same or similar stimuli call for different responses and Watson [405] voices the opinion that incompatibility, rather than similarity, is the significant factor in causing interference Thus, if one were
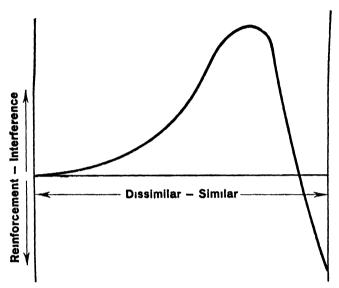
FIG 11 2 *Theoretical curve of interference with increasing similarity of interpolated and original learning*

to study two lists of response words to the same list of stimulus words, the second list would cause maximum interference with the first it is probably better, therefore to master one foreign language thoroughly rather than undertake two languages at once

Temporal position of interpolated learning Although the relation is not entirely clear-cut, there is some evidence [311] to suggest that interference is at its maximum when the interpolated learning takes place either immediately following the learning or immediately preceding the testing of the original material Thus, it tends to be unwise to cram desperately for a couple of examinations the night before the tests, as it is to arrange one's schedule so that classes follow consecutively without a break

Similarity of the testing and learning situation The more associative cues the learner can form, the more likely he is to retain what he has learned Thus, it is well known that a student is more likely to recall the answer if the question is phrased in the words of the text than if it

is changed In the same way, we are less likely to mistake Mr Jones for Mr Smith if we see Mr Smith in the same office where we first met him than if we see him on the street

Degree of mastery of original and interpolated learning The more compact, structured, and self-contained a given learning is, the less it
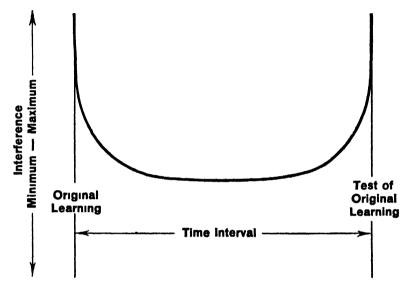
FIG 11 3 *Theoretical curve of interference as a function of the temporal position of the interpolated learning*

will be interfered with by other learnings Other things being equal, the more meaningful the material to the learner, the more organized and the more interrelated are its various components, the less affected it is by interference of subsequent learnings and the less it will interfere with other learning, either previous or subsequent Obviously involved in the degree of meaningfulness of the materials are such factors as [1] the simplicity and the degree of continuity in the material, [2] the intelligence and experience of the learner, and [3] his motivation and persistence as well as the time he has to devote to getting a clear picture of the material Thus, difficult material tends to be forgotten quickly simply because it is not learned or understood adequately In the same way, as long as facts remain as isolated bits of information, they not only tend to impede rather than to facilitate further learning but they are also quickly forgotten, while, on the contrary, when they attain functionality in terms of interrelationships, applications, generalizations, interpretations, and implications, they resist forgetting The fact that so much of the learning of the classroom fades away so quickly and so com-

pletely may suggest that the material borders on nonsense, as far as the child is concerned

Overlearning and reviewing Very directly related to the rate and the amount of forgetting that takes place over a period of time are the degree to which the material is overlearned and the number of reviews occurring subsequent to the initial learning Actually, overlearning and reviewing pertain to different degrees of learning rather than to the question of the interference of such learning but, as shown in the accompanying diagrams, they are, nevertheless, basic determinants of the rate at which the retention curve drops and of the final level that is reached Thus,
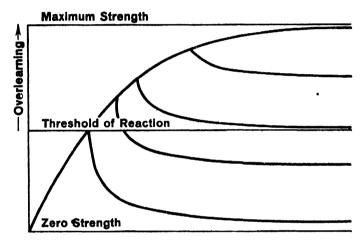
Fig 11 4 *Theoretical retention curves associated with different degrees of overlearning*

if the material is learned only to the point of one correct reproduction and is not reviewed, retention will tend to drop very sharply almost to the zero point, whereas if the material is learned considerably beyond the point of bare mastery, it may never drop below the level necessary to reproduce the material One would be able to recall the pledge of allegiance, for example, even if he did not have occasion to repeat it for years The factor of overlearning is also involved in the retention of many skills such as riding a bicycle for, contrary to popular opinion there is no reason to expect skills to be retained any more easily than verbal material when the two are learned at the same degree, have the same degree of organization and integration, and are relatively equivalent from the standpoint of other factors relating to retention

Excessive overlearning tends to be uneconomical As can be noted from the shape of the learning curve, the law of diminishing returns in

the form of a ceiling and of a decline in motivation soon sets in so that, after a certain degree of mastery of the material has been attained, relatively little improvement in performance accompanies further attempts at learning Nevertheless, good retention requires good learning and some overlearning, say 50 percent, is probably a good investment of time and effort from the standpoint of delayed recall

Review is probably one of the best means of maintaining retention above a given level Spitzer [361], for example, found that more forgetting occurred in one day when retention was not aided by review than in 63 days when two review periods were introduced As shown in this diagram,

Maximum Strength
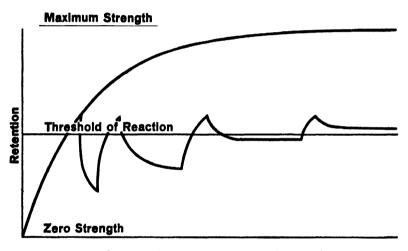
Fig 11 5 *Theoretical retention curve with periodic review*

review overcomes the forgetting that has occurred and brings the material back above the threshold of reaction As the learner reviews periodically what he has learned, the loss becomes progressively less to the point that it may remain above the threshold of reaction almost forever Depending on the thoroughness of the original learning, the first review should probably come within twenty-four hours after the initial learning, the second perhaps within a week, the next possibly within a month, and so on   •

Periodic reviews are generally more effective from the standpoint of economy of time and effort than is overlearning This is especially true in that effective review is more than just bringing the material back to the original level in meaningful material, it involves a reorganization, a systematization of the learning to bring about new understandings, new

insights, and new relationships that are more functional as well as more permanent than the original level of learning

Except in the case where the material has faded to the point where reviewing by recitation would be essentially guesswork, review should not take the form of a re-reading of the same material Skimming a related source for new ideas, working through a quiz, thinking through the implications of the material or using the knowledge as a stepping stone to more advanced learning in the field, all constitute effective review Unfortunately, this is not emphasized as much as it should be in our schools where, instead of being encouraged to gain real understanding through seeing the material from a broader and more diverse point of view, the student is often required to become letter perfect in a limited area such as the material of a chapter in a single book

Also of direct bearing in this connection is the question of how much repetition and overlapping of material should occur from course to course in order to promote a sufficient review of the material needed for further growth Such review is, of course, essential However, it is equally important to avoid more duplication and the review that takes place should be organized as a stepping stone in connection with more advanced work in the field

Set or intent to remember Retention is facilitated by having the student learn with the full expectation of being tested on the material at a later date This intent to remember is related to the basic concepts of motivation and of needs which make for maximum retention through leading the student to make periodic, formal or informal, review and above all, through making for a more intense impression at the time of learning Thus, the affection-starved youngster might remember almost forever a smile given quite casually Parents often get reminded with the common "But you said   " of a promise given without much thought children don't forget when they have been promised something in which they are interested, but they conveniently forget having been told to do certain chores which don't have too much appeal The more ego-involved the child is, as in the case of the child who is left with an unsolved or partially solved problem, the less the forgetting that is likely to take place This procedure, used regularly in serial stories, could also be used effectively in the classroom, e g , getting the student interested in a given problem which intrigues him but giving him only half the answer and leading him by thought-provoking questions to go the rest of the way by himself or, at least, to keep the material clearly in his mind till discussion is resumed next lesson

Research has made relatively clear the factors which make for greater retention As might be expected these rules do not apply in an equal degree to all learning situations, but to the extent that they do, it is the teacher's task to work—and have the students work—in harmony with these principles in order to minimize the forgetting that would otherwise take place The data in this section suggest the relative validity of the following suggestions

[a] See that the student understands what he studies The material should be presented, not as isolated fragments, but rather organized into relatively large units which are meaningful in terms of the student's ability and background with stress being placed on generalizations and applications which tend to withstand forgetting Material that is so difficult for the child that he can master it only in the sense of memorizing it for reproduction in the examination serves no useful purpose Jordan [200], for instance, is of the opinion that generally no one with an IQ below 90 should be allowed to sign up for a course in a modern foreign language

[b] Encourage a certain degree of overlearning The extra effort is a wise investment in terms of long range retention, especially that, in the case of meaningful material, it generally makes for greater understanding

[c] Encourage periodic review This can be done most effectively through scheduling frequent quizzes and by insisting that students make use of the material they have learned in climbing to higher levels This is, of course, more obvious in subjects like mathematics which incorporate a large element of continuity and in which material is periodically reviewed while working on more advanced work

Distributed practice in the form of frequent reviews tends to make for economy of learning as well as efficiency from the standpoint of permanence of retention It is also more likely to promote reminiscence through differential forgetting, i e, through giving an opportunity for competing incorrect responses to drop out (because they were not learned to the same degree) leaving unopposed the correct responses

[d] Encourage intent to remember The student who anticipates being tested on certain material or who is self-involved in a given topic is not likely to go merely through the motions of studying nor is he likely to dismiss it from his mind the minute the lesson is over

[e] Avoid scheduling in succession lessons which tend to interfere with each other Of course, it is not always possible to determine in advance what is likely to interfere, especially as what causes interference

for one student might actually lead to reinforcement in the case of a second student And, obviously, scheduling considerations do not always allow for optimal sequence of classes from the standpoint of interference

[f] Avoid introducing new material in a hurried fashion Occasionally, teachers rather than waste the last five minutes of class attempt to introduce the next lesson In doing so, they throw at the student a lot of material which is so hazy that it only serves to interfere with the material previously learned Unless they can do a reasonably thorough job of presenting a new lesson, it is probably better to spend the time in having students consolidate what they have already learned In the same way, a long topic should probably be broken down into manageable subunits that can be handled adequately rather than trying to cover in a hurried fashion more than the time allowed will permit

[g] Promote effective learning as a means of promoting greater retention Stress should be on meaningfulness, organization, overlearning, distributed practice, intent to remember, and other psychologically sound pedagogical procedures

Transfer of Training

The purpose of educational experiences, both within and outside the school, is to enable the individual to meet new situations more effectively In fact, throughout life, the intelligent individual profits from his experiences ' in the sense that, as a result of these experiences, he is better prepared to meet not only the same situation but also related experiences This is of special significance in the classroom where experiences are deliberately planned in sequence so that one serves as a stepping stone to the next

Life, and especially the school, is predicated on the assumption that transfer of learning is a reality, that what we learn on one occasion will facilitate our dealing effectively with another situation of a related nature If it were not for transfer of learning, we could never teach more advanced levels—in fact, we could not learn anything Furthermore, since it is impossible to teach the child all the things he will need as an adult in later life, even if we could foresee what he would need, it is necessary to assume that, by virtue of what we have led him to learn, he will be able to adapt himself to new situations Thus, such important decisions as what to include in the curriculum and how we should teach these things revolve around our views on transfer of training, for any curricular

offering is justified only to the extent to which it permits the student to use it as the basis for more effective behavior in another course or in life It would follow, for example, that the more pessimistic a person is as to the amount of transfer that can be expected from a given educational experience, the more insistent he is likely to be on a "practical" "social utilities' curriculum

MEASUREMENT OF TRANSFER

As in the case of retention, the degree of transfer to be expected from a given situation can be determined by experimentation If, for instance one is interested in whether or not previous experience in playing the piano facilitates the subsequent learning of typing, he would again have to start with two groups of students—one with experience on the piano and the other without—be sure that they are equated with respect to such relevant characteristics as chronological age, general motor coordination, motivation, and especially relative unfamiliarity with the typewriter The two groups might be subjected to the same instruction in typing for a period of say three months If the group having had experience on the piano makes greater gains in typing than the other group, he can conclude that transfer from the piano to the typewriter has taken place Thus, in schematic form.

	Previous Learning [Learn A]	Present Learning [Learn B]	Gain [Test B]
GROUP I (Experimental)	Play piano	Learn typing	Test typing
GROUP II (Control)	Nothing related	Learn typing	Test typing

In this case, we are likely to have *positive* transfer, i e , the *previous* learning experience is likely to facilitate the *subsequent* learning However, transfer can also be *negative*, in which case the previous learning interferes with the' subsequent learning of another activity Thus, having learned to judge the flight of a softball might, at first, cause a fielder to misjudge the flight of a baseball Generally, the transfer from one activity to another involves both negative and positive aspects and the transfer involved is the net sum of the facilitation and the interference of the one learning with respect to the other For instance, there are many skills in softball that are sufficiently similar to those in baseball that a person would be helped by his previous knowledge of softball,

but there are also skills sufficiently incompatible that the person would have to unlearn the old ones before he could learn the new ones The extent to which one would be ahead or behind as a result of his previous knowledge of softball would depend on the relative balance of the positive and the negative phases of the transfer between the two sports In the same way, experience in driving a car in the United States would involve both positive and negative transfer for driving a car in a country where vehicles move on the left side of the road

RELATION TO FORGETTING

Before proceeding further with the present discussion, it might be well to distinguish—to the extent that such a distinction can be made—between transfer of training and forgetting In the latter case, we are concerned with the interference (or reinforcement) which subsequent learnings may have on our retaining what we had previously learned In the case of transfer, on the other hand, we are interested in the extent to which what we have previously learned will facilitate (or hinder) our subsequent learnings The difference might be shown by means of the following set-up

| RETENTION | Learn fractions | Learn decimals | Test fractions |
| TRANSFER | Learn piano | Learn typing | Test typing |

On closer inspection, however, the distinction becomes rather artificial for, as pointed out by Melton [258], forgetting is nothing but an aspect of negative transfer Since two situations are never exactly alike retention, in the example above, implies a transfer of what has been learned in the classroom setting on the subject of fractions to the examination situation where the student's knowledge on the subject is to be appraised Forgetting, then, is essentially a case of transfer with the interpolated learning interfering with the recall of the original learning In other words, the learning of decimals interfered with the performance on the examination on fractions, just as the learning of softball might interfere with the performance of some phases of baseball

EXPLANATION OF TRANSFER OF TRAINING

Early psychologists in their attempt to explain transfer of training postulated what is known as the theory of formal discipline According to this theory, the mind is made up of a number of faculties or powers which, just like a muscle, can be developed through training and which then are capable of effective performance in all areas in which they are

involved Thus, the training of the faculty of memory through practice with, say, nonsense syllables, improves one's memory for names, for meaningful material, in fact, for anything which calls for memory Accordingly, education is largely a matter of training or disciplining the mind through rigorous mental exercises in the classics, logic, mathematics, etc, on the assumption that such training makes a person equally effective in all areas where a given faculty is involved Thus, after training in reasoning it is assumed that a person can reason effectively in matters of philosophy, of mathematics, social issues, and housekeeping [2]

This view was first challenged by James [190] who found no improvement in his ability to commit poetry to memory resulted from a month's practice in memorizing Hugo's 'Satyr' Following the question raised by James as a result of his rather simple experiment, the theory of mental disciplining was challenged by such studies as that of Sleight [349] in the area of memory, of Thorndike and Woodworth [389] in the area of perception, and of Briggs [43] in the area of reasoning, to mention but a few In these studies, the expected improvement in performance in related tasks did not materialize In fact, in some cases the previous practice actually led to an impairment in performance, i e , to negative transfer, in a study by Kline [218], for example, it was found that practice with canceling letters interfered with performance in canceling words

The modern explanation of transfer of training is to be found in one or more of four greatly overlapping theories

[1] Probably best known is the theory of *identical components* postulated by Thorndike [383] at the turn of the century According to this view, transfer takes place from one learning situation to another to the extent that there are identical aspects in the two situations [3] Thus, transfer takes place from playing a piano to typing to the extent that such skills as eye–finger coordination are identical in both These elements of similarity between the two situations are not restricted to skills, of course, they could take the form of information, principles, generalizations, procedures, attitudes

[2] Gestalt psychologists explain transfer on the basis of what they call "transposibility" They point out, for example, that a song learned in a certain key may be recognized in a different key even though none

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[2] It is worth pointing out that the concept of the mind as made up of mental faculties bears a certain resemblance to the concept of mental factors as postulated by Thurstone in his theory of intelligence The student would do well to clarify his thinking as to the difference between the two concepts

[3] According to this view, transfer occurs to the extent that the learner can use certain aspects of his previous learnings in dealing with a situation which is only partially novel

of the components of the song are identical In the same way, cats trained to eat out of the larger of two dishes will, when presented with two other dishes, so that what was before the larger dish is now the smaller of the two, eat out of the new larger dish instead of the dish they had eaten out of before Actually, except for a greater emphasis on understanding, the Gestalt position is really in agreement with that of Thorndike the identical components in the examples constitute the pattern, and not the parts themselves i e, the cats reacted not to the dish but to the relationship *larger-smaller*

[3] Judd's explanation of transfer in terms of his well-known theory of generalizations [201] centers around the applicability of principles and generalizations to diverse and varied situations Thus, in a repetition of Judd's original experiment, Hendrickson and Schroeder [171] found that children who were acquainted with the principle of the refraction of light were more successful in hitting a target submerged in water than were those who were not familiar with this principle Actually, Judd's theory is in complete agreement with that of Thorndike and that of the Gestalt psychologists it simply places emphasis on relationships and generalizations as components on the basis of which transfer can take place

[4] Another version of relatively the same explanation is that of Bagley [16] who emphasized transfer through the formulation of ideals or generalized attitudes Much of the training the child receives does not go beyond the immediate area in which the training is given Bagley suggests that by stressing neatness, for example, not in specific situations but rather as an ideal, it is possible to have it transfer more completely to a greater portion of the child's total behavior

FACTORS AFFECTING TRANSFER OF TRAINING

The previous discussion has shown that, regardless of the specific terminology used, the various theories on transfer emphasize much the same techniques and methods, e g, stress on understanding particularly of principles and generalizations, development of positive attitudes, and the learning of effective procedures With this as background it may be worthwhile to consider the amount of transfer which may be expected in a given situation This question is of particular importance to teachers who are continually faced with instances of nontransfer, e g, the case of English grammar which too frequently is used only during the English period Whereas it is impossible to give blanket formulae whereby one can calculate the exact extent of transfer to be expected in all cases, some general considerations may be explored

[a] First of all, transfer is not only possible it actually materializes in the usual situation A review of 167 investigations dealing with transfer [411] showed 28 percent with considerable transfer and 48 percent with appreciable transfer Certainly remedial and "How to Study" courses are predicated on the assumption—which has been borne out by research [126]—that these courses will be conducive to success in a variety of subject fields

Probably no factor is as likely to lead to transfer as is a positive attitude on the part of the learner that transfer is possible, that what he is learning has application and that his previous learnings are probably adequate for the solution of the present problem Thus, Dorsey and Hopkins [99] obtained a 16 percent increase in transfer by simply telling them students that the material they were learning would be useful in other situations On the negative side, it is probably true that many children in English classes do not see the grammar phase of the course as something which has any bearing on the writing of themes or on everyday communication

[b] As emphasized by the theories mentioned above, transfer relies heavily upon meaningfulness, generalizations, and principles Whereas facts also have transfer value, their applicability to other situations is much more restricted The amount of transfer that takes place in a given classroom situation is essentially proportional to the degree to which one teaches for transfer, i e , the extent to which the learning situation is brought to a generalization, and to the extent that relationships, implications, and applications to various situations are pointed out—or, even better, that the child is encouraged and helped in discovering these for himself Overman [289], for instance, found that the group for which arithmetic solutions were generalized outscored by a significant margin one group in which the procedures were shown only and a second group in which the reason for the procedure used was discussed The child should be made to see the purpose, in terms of later life or of related skills, of the material he is asked to learn and the school's evaluation program should emphasize application to novel situations as a measure of real understanding of the material covered Teachers are often too eager to tell everything, thereby depriving children of the opportunity of seeking applications and relationships for themselves Actually, departmentalized teaching is a drawback to transfer in that it is conducive to memorization and drill on fragmentary learnings such as facts and a corresponding underemphasize on relationships and other aspects of learning that promote transfer It should be noted that the mere presence of

identical components, even if pointed out, will not result in effective transfer Transfer can be expected only to the extent that the child is encouraged to become transfer-conscious, to form attitudes of self-confidence, of wanting to apply what he knows and that he is helped in developing effective procedures in dealing with novel situations

[c] The curriculum should be such as to have transfer value in terms of the learner's goals and purposes Thus, the learning of Latin and Greek in high school and college may be of considerable benefit to a person going into the Roman Catholic clergy or even perhaps into medical school, but a course in homemaking would certainly have more possibilities for a girl who plans to marry and raise a family This is not to imply an automatic rejection from the curriculum of all the classical studies and an unconditional endorsement of the social utilities approach, but it should be pointed out that the latter does tend to be more closely related to the present and future needs and purposes of the average student who is more likely to find use for the experiences he gains from committee reports, discussions, and student government than he is from some of the more traditional aspects of the school's curriculum On the other hand, it must also be noted that learning experiences should not be judged solely on their transfer value and, even more important, that the social utilities approach does not have a monopoly on transfer All that is warranted on the basis of the rejection of the theory of formal discipline is that one can no longer justify the inclusion into the curriculum of subjects merely on the basis of their disciplinary value   •

Three important studies have shown that the superiority of the classical subjects in promoting an improvement in reasoning ability has been considerably exaggerated In the first study, Thorndike [386] tested over 8500 senior high-school students with Form A of the I E R , a test of general reasoning ability at the beginning of the year, and with other forms of the same test after they had completed one year of the various curricula in which they were enrolled The same study was repeated three years later with a new sample of five thousand [47] In both studies, the gain in reasoning ability of the group enrolled in business, drawing, English, history, music, shop, and Spanish was used as the point of reference and given a value of 0 00 and the gains for the other curricula calculated with this as a starting point Unfortunately, the results did not show any high degree of consistency in the ranking of the subject areas although the mathematics and physical science groups ranked near the top in both studies The results shown in the table below represent the average ranking obtained from the two studies [130]

TABLE 11 1

Subjects	Relative Effects on Test Gains
Algebra, geometry, trigonometry	+2 99
Civics, economics, psychology, sociology	+2 89
Chemistry, physics, general science	+2 71
Arithmetic, bookkeeping	+2 60
Physical training	+0 83
Latin, French	+0 79
Business, drawing, English, history, music, shop, Spanish	0 00
Cooking, sewing, stenography	—0 14
Biology, physiology, agriculture	—0 15
Dramatic art	—0 48

A better study of the same problem is that of Wesman [415] who, by administering academic achievement tests, corrected one of the major weaknesses of the previous studies namely, the fact that no distinction had been made between being merely enrolled in a given curriculum and mastering its content His results agreed very closely with those shown above and can be construed as a confirmation of the conclusion that the transfer value of the various academic curricula as it relates to the improvement of reasoning ability is not appreciably different Or, as stated by Andrews et al [11] in the *Encyclopedia of Educational Research,* "There is no superior subject matter for transfer, there are only superior learning experiences "

It is interesting to note that, despite the fact that empirical as well as theoretical evidence has led psychologists to discard the theory of formal discipline, there are still educators who advocate hard courses to "toughen the mind," who feel that the curriculum has become soft and that what we need is a return to Latin, the classics, logic, the great books and other courses of yesteryear They point to the capable students among those who have followed such a curriculum as evidence of the benefits to be derived from such courses Apparently their tough curriculum did not improve their own reasoning ability enough for them to see that it did not make these people capable but simply eliminated those with lesser ability [4]

The learning of Latin is often advocated on the basis that it helps with the learning of English grammar and vocabulary This is not false it helps when—and almost only when—English derivatives are stressed Nevertheless, it stands as a fact that it is not an economical way of learn-

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[4] Research [353] at the college level has shown that when intelligence is held constant Latin students are only very slightly ahead

ing English If one wants to learn English grammar, the simplest and most effective way of doing this is through the learning of English grammar rather than via Latin Many words in the English language have a Latin derivation but a study of Latin roots as they apply to English vocabulary is more effective and economical than a study of Latin as a language would be in this connection In other words, one should teach directly that which he wants children to learn rather than expect indirect benefits through transfer Thus, the question is not whether such studies as Latin and the classics are useful, for undoubtedly they can be useful, but rather whether they are more useful than other subjects which also have transfer value in addition to a much larger degree of direct values Similarly, a course in mathematics has to be accepted on the basis of what it can contribute to the solution of mathematical and related problems rather than on the basis of the improvement of reasoning ability, for no subject, as we have seen, has a monopoly on the latter

[d] The amount of transfer is very closely related to the intelligence of the learner [5] In Thorndike's study, for example, the bright made a gain of 20 5 points in reasoning ability while the slower students gained only 1 5 points Similarly, DiMichael [96] found little transfer from how-to-study courses to academic performance for the lowest quarter in intelligence This is probably related to the fact that transfer is facilitated by understanding and generalizations For the person for whom, because of ability or past experience, the situation is meaningful, the possibilities of transfer to other situations is automatically increased Thus, it might be noted in passing that the dull is triply penalized he learns slowly because the material is not meaningful to him (partially because he cannot transfer enough of his previous experiences), he forgets it more quickly because it is less meaningful, and he has more difficulty in having it transfer and form the basis for subsequent learning For this reason, the teacher dealing with dull children needs to be particularly conscientious in pointing out the transfer possibilities of the material On the other hand, not to be overlooked is the bright child's tendency to make errors through overgeneralization, e g , to transfer his experience with *like* and *likable* to the misspelling of *noticeable* •

EDUCATIONAL IMPLICATIONS

The implications for educational practice of transfer of training have been more or less indicated throughout the discussion It might, how-

ever, be well to re-emphasize that transfer is not automatic but rather that it occurs in proportion to the extent one teaches or learns with transfer in mind and to reiterate some of the effective techniques whereby transfer can be promoted

First an appropriate curriculum is essential Since, without transfer, education is a relative, if not a complete, waste of time, the transfer potentialities of the various curricular experiences should be one of the important considerations in curriculum planning However, since the transfer value of a given experience depends more on the way it is handled than upon its nature, transfer finally becomes the responsibility of the teacher who, when setting out the objectives of a given course, unit, or lesson, needs to spell out in definite terms the specific ways in which transfer is to be promoted Nevertheless, it is also true that the curriculum should be one that is closely related to the experience, needs, and purposes of the child so that he can bring something to the curricular material and, in turn, see enough of the benefits to be derived from the material so that he generates interest in using it in connection with some other aspects of his interests

Probably all subject matter has transfer value but certain aspects of education have wider application than others and every child should be familiar with such things as common roots of words, suffixes, prefixes, basic numerical concepts, certain rules of English, certain principles of science, basic rules of study, and effective modes of problem-solving A course in geometry, for instance, might better stress the nature of proof, which has a wide transfer potential, rather than simply the proof of individual theorems Likewise, in teaching content subjects, the emphasis should be on principles and generalizations rather than on individual and isolated facts

Other suggestions could be given such as [a] make learning experiences as much as possible similar to situations to which transfer is expected, [b] provide practice in transfer, [c] force children to become transfer-conscious by using as one of the major evaluative devices ability to transfer to novel situations the knowledge they are supposed to have gained, but [d] probably the most important single aspect of transfer lies in the area of attitudes If we can but provide children with favorable attitudes toward the experiences they encounter in the classroom and the values for which the school stands and provide them further with a positive self-concept, which will enable them to approach new situations with eagerness and confidence in their ability to solve new problems on the basis of their previous learnings, our efforts at educating them will not have been in vain

HIGHLIGHTS OF THE CHAPTER

The effectiveness of the school depends in considerable measure upon the question of retention and transferability of the material the child has learned The teacher, therefore, needs to be familiar with the psychological principles underlying these two functions

1 Some degree of forgetting is not only inevitable but actually desirable The problem is one of maximizing the retention of those learnings which are important from the standpoint of the further growth of the individual

2 The explanation of forgetting most commonly accepted among modern psychologists centers around the interference by subsequent learnings with the recall of material previously learned The extent of this interference varies with the similarity and the degree of mastery of the original and the interpolated learning, the degree of overlearning and the frequency of review, the learner's set, and other factors discussed in this chapter

3 Transfer of training is the cornerstone upon which education must ultimately rest, unless what the child learns helps him in meeting more effectively situations further along the academic sequence or in later life, he is essentially wasting his time

4 Transfer from a previous to a novel situation takes place in the extent to which the learner is made aware and encouraged to take advantage of the identical components in the two situations

5 The treatment in this chapter of forgetting and of transfer of training under a common theoretical framework implies that whatever suggestions apply to one are also relevant in connection with the other Thus, the meaningfulness of the material, the emphasis upon generalization and principles, the cultivation of positive attitudes, the practice of overlearning and periodic review, all tend to reduce memory losses as well as to promote transfer

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QUESTIONS AND PROJECTS

1 Why is meaningful material retained longer than nonsense material? Is anything ever completely forgotten?

2 How would you devise an experiment to determine the transfer effects of the study of English grammar on English composition? Of a course in science on critical attitudes?

3 Can subjects be divided into content subjects and tool subjects? How real is the distinction?

4 Specifically, how much transfer might the average student expect from this chapter? from this course? from a course in English literature?

5 Specifically how might a course in high school geometry be taught so as to ensure maximum transfer to other situations? Look in the Education Index for an article or two on this subject

12

The Higher Mental Processes

*Many teachers feel that they do not have time to discover and
remedy their pupils' lack of information and skill because they
would never be able to "cover" the material called for in the
course, so they plunge ahead from a starting point that many of
their students have never reached and they proceed to teach the
unknown by the incomprehensible The result is that the student
cannot learn effectively and ends the course about where he
started*

PRESSEY ET AL *

ONE OF THE PRIMARY REASONS for existence of the school in a democracy
is that of promoting problem solving and understanding that will enable
its future citizens to deal effectively with the problems of democratic
society In a society where individual participation in decisions is essential
to survival, it is disconcerting at times to have people take up with com-
plete conviction opposite sides of a given issue or to see decisions made
that are definitely short-sighted and detrimental to the people who make
them A particularly pessimistic position is taken by Horn [184] as re-
vealed in the following quotation

> Investigations of the knowledge and ability of students in
> high school and college as well as adults leads one to suspect
> [a] that the average individual does not now have a sufficient

* Pressey, S L et al, *Psychology in Education* New York Harper, 1959

background of accurate information to think effectively about modein problems, [b] that he does not know the sources of dependable information, and [c] that he could not read those sources with understanding even if he found them

The indictment may appear strong and, obviously, even if valid would not reflect upon the school alone Yet the school is not without blame in the mattei for ceitainly it cannot be denied that, despite the present tiend toward meaningfulness and problem solving, the emphasis in the average classroom is still much too much on the memorization of half-digested facts

Reasoning and Problem Solving

THE NATURE OF PROBLEM SOLVING

The consideiation of problem solving as a separate topic may appear misplaced since problem solving is simply an aspect of learning essentially similar in nature and subject to the same laws as the other forms of learning involving complex relationships These, as we have seen in Chapter 8, are characterized by such elements as a motivated individual encountering an obstacle to the attainment of his goals and finally reaching a solution which is learned in accordance with the law of effect Problem solving is essentially a matter of seeking, reaiianging, and evaluating the data with respect to a problem whose solution is not readily available Generally, it also involves a somewhat greatei emphasis on insight (or hindsight) in discovering means-end relationships than would certain other forms of learning but the process is diffeient in degree rather than in kind

Problem solving is too complex a process to lend itself to a simple description and probably the best understanding of this process can be derived from a consideration of the steps of the method of scientific thinking as described by Dewey [93] in his book *How We Think* [1] These will be discussed in order of their theoretical sequential arrangement even though in everyday life they rarely follow in a 1–2–3 fashion

Becoming aware of a problem Problem solving cannot take place without a problem but problem-solving behavior is not initiated by the

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[1] Thinking, reasoning, and problem solving, used in the technical sense, are essentially synonymous terms However, the word *thinking* is often used loosely by the layman, e g , "I think he will come," in the sense of "I am of the opinion that he will come"

existence of a problem in an objective sense but rather by its recognition as a problem situation by the individual Dewey defines a problem as a "felt need," thereby implying that a problem is an individual matter, i e , what constitutes a problem for one person may not be a problem for another Thus, once again we see (as we did in Chapter 8) that motivation is the first step in the learning process Problem solving in school, for instance, occurs only when the child is faced with a problem that is genuine to him in terms of his needs and experience, i e , it is the learner's encountering of an obstacle to the satisfaction of his needs that leads him to think in order to remove the obstacle and reach his goal A real problem is more than ideas to be manipulated it represents a situation in which the individual's equilibrium is being threatened and, unless the learner feels a discomfort over the fact that a given problem is not solved (i e , he becomes ego-involved), he does not have a *problem* Under these circumstances, he will not care in the least whether or not the problem is solved and, as long as this is true, the problem will simply remain the teacher's problem To the student, it is just a task and his real *problem* in the matter may well be how to avoid having to go through all this unnecessary work

Clarification of the problem Once the learner has come into contact with a problem which is real to him, his first step is to define its exact nature for, unless he has identified the issues involved, he is not likely to be too successful in finding a solution Having clarified the nature of his problem, he needs to proceed to investigate the relevant information available, a task which may range all the way from a quick check of the data at his finger tips to a systematic review of the literature requiring the patience and thoroughness given to a thesis or dissertation The purpose of such a review is to look into what is already known about various aspects of the problem in order to permit the derivation of more intelligent hypotheses as to potential solutions as well as the planning of more effective modes of attack This step is important the learner needs to get sufficient data, for reasoning cannot take place without data Too often, for instance, discussion in the classroom, even at the college level, consists almost entirely of superficial, if not erroneous, remarks made by students who have not taken the time and trouble to look up the facts Furthermore, those data must be assimilated to the point where the learner sees them in their interrelationships, i e , where they are organized with respect to the problem We need to help the student in his learning of effective ways of locating data, of organizing these data through underlining, summarizing, and synthesizing, of checking his data for accuracy, and of reconciling seeming contradictions Above all, we must help him

cultivate a respect for accuracy These are important skills and attitudes and the school should encourage their development failure to do so is bound to result in superficial reasoning, if not in error

Emergence of the hypotheses Seeing the problem in the light of what is known about it should lead the learner to a hypothesis as to its likely cause and its likely solution This calls for good grounding in the problem, without which crucial relationships are likely to go unnoticed Hypotheses sometimes come as inspirations which, like insight, may be quite sudden They may occur after a period of inactivity has broken a mental set which had acted as a block to the solution of the problem, but, generally, the hypothesis comes only after a systematic and often laborious consideration of the evidence in relation to the problem

Elaboration of the hypothesis Once postulated, a hypothesis must be evaluated in terms of its implications relative to what is known (or accepted) to be true, e g , is it consistent with this principle? with that fact? Thus, the person who hypothesizes a dead battery as the cause of the failure of his car to start would have to reject his hypothesis forthwith if he remembers that when he stepped on the starter the motor turned over with the usual speed Likewise, he might be tempted to reject—perhaps erroneously—the hypothesis that he is out of gas if he recalled that he had filled the tank very recently At any rate, rejection of a hypothesis simply forces the individual to seek another which must also be elaborated mentally to see if it is in agreement with known facts In the meantime, more information might come to light and the learner may find it necessary to clarify his problem further in fact, the effectiveness with which one arrives at a fruitful hypothesis is often in direct proportion to the extent to which the problem is clarified sufficiently to permit distinguishing the relevant from the irrelevant

The good thinker can not only come up with a large number of hypotheses but he can readily separate the good ones from the poor ones and avoid chasing himself into blind alleys Some of the factors that make for effectiveness in this area include intellectual capacity, experience, flexibility, originality, and, not least, a critical attitude that prevents the learner from accepting half-baked ideas All of these are necessary conditions for success in the derivation of correct hypotheses but none is sufficient thus, the child who has never seen a blizzard cannot reason about its dangers, although, of course, if other factors are absent, he may have seen dozens of blizzards—and still not be able to reason about them effectively

Testing the hypothesis Once a hypothesis which seems to stand up well in the face of known evidence on the subject is obtained, the learner

needs to act upon this hypothesis in order to test its validity Thus, if the person whose car would not start decides that perhaps his trouble lies in a loose wire, he can check his hypothesis by making sure that all connections are tight and, if when this is done the car starts, his hypothesis has been substantiated and the problem has been solved If the car still does not start, he then has to go back to locate another hypothesis and begin anew It is obvious that problem solving tends to involve various degrees of trial and error and insight,[2] and it is not uncommon to have the learner hit upon a solution somewhat by accident, and to develop insight, after the solution has been obtained, into why this particular solution worked while his previous attempts had failed It may even take the learner back to a redefinition of his problem Thus, as we have previously indicated, problem solving is often not a matter of following in a 1–2–3 fashion the steps listed here but rather a back-and-forth movement involving all the steps in semi-irregular order

Generalization A final step in problem solving consists of the application of the solution to related cases as a means of clarifying the areas in which the hypothesis applies and the areas in which it does not This ability to apply solutions from one situation to another is the real test of understanding, but, unfortunately, not all problem solving is carried to the point of such generalization—and contrariwise, the learner sometimes jumps to conclusions, i e , reaches generalizations before considering all the evidence

FOSTERING PROBLEM SOLVING IN THE CLASSROOM

As we have seen in Chapter 7, the inadequacies of the child's reasoning has led some people to suggest that reasoning is a capacity that makes its appearance relatively late in the maturational process, an argument which was used as justification for the drill and memory work in the school of yesteryear This view is obviously in error, for even infants can reason True, the reasoning of children is relatively ineffective—for a number of reasons which we have already considered Furthermore, because of their lack of experience, they are relatively blind to the existence of problems Nevertheless, there is no magic point of transition from inability to ability to think, and adults—even experts outside their own field of knowledge—commit much the same errors of reasoning as children do Furthermore, since reasoning ability is closely related to intellectual development, it is obvious that there are wide differences in reasoning ability and that many children can reason more effectively than many adults But, of course, if children's reasoning is to be effective, the

[2] In fact, problem solving is essentially identical trial and error

problem must be related to their ability and their needs and the relationship between the parts which they must understand in order to reach a solution must be within their understanding and experience In other words, the effectiveness of the reasoning of children is subject to the same conditions and limitations as that of adults

Actually, the school in the past has been somewhat misguided in its efforts to promote problem solving on the part of the student Thus, while mathematics is ideally suited to such training, branches of mathematics like geometry are often taught through memorization even though it leads to an improvement in reasoning ability only when it is meaningful Most arithmetic problems are mere exercises in imitation of what the teacher has demonstrated and, since only a negligible amount of transfer can evolve from such learnings, the child becomes progressively less capable of using them in reasoning at a more advanced level Likewise, experience in the various science courses often involves nothing more scientific than following blindly in a manual to the bitter end till, often to the student's surprise, he gets the predetermined answer As stated by Boeck [35], "Research findings indicate that the possession of a scientific attitude and the ability to use the methods of science on the part of students are not natural consequences of being a member of a science class" Neither does enrollment in college courses in science and mathematics necessarily make students "more logical, more reasonable, less affected by presuppositions and prejudices" in their reasoning on economic, political, social, and religious issues [343]

Teachers are apparently so afraid that they may not earn their salaries unless they help the child over every hump that they do not give him an opportunity to do real problem solving Many lessons are so complete, so thoroughly digested that he is left with nothing more than imitating or summarizing—often quite blindly—what was covered When they do not supply the answers themselves, many teachers refer the child to the textbook, the words of which they expect him to accept unconditionally And so the three proofs that the world is round become [a] my father said so, [b] teacher says so, and [c] the book says so If teachers are to be successful in fostering reasoning in the classroom they must break the child of his blind allegiance to the word of the book or of the teacher, they must come to realize that he gets more education in terms of both the present and future by solving one real problem than by repeating in a dozen situations, the solution given ready-made by the teacher The child must gradually shed his dependence upon the teacher The latter must, therefore, make it his responsibility to foster this independence on the part of the child by helping him only after he has made a

fair attempt to find the solution or after it is clear that he cannot handle the problem

This is not to say that the teacher should do nothing but suggest to the student that he find his own answers He should first see that the latter has a problem which is meaningful in terms of his needs, his experiences, and his abilities Then he can, by means of well directed questions (rather than answers) help him clarify his problem and devise an effective approach to its solution He will also have to act as a resource person while the student looks up the necessary information and carries out the activity, but he should not provide the answers before the student has even noticed that answers are needed In other words, as pointed out by Thorndike [391], the school should be more interested in creating problems for the student to solve and in providing him with the methods whereby he can get his own answers than in providing him with ready-made solutions This would, of course, have to be within the limits of wasted effort for there is no point in giving him puzzles from which little learning can be derived

Instead of "filling the bowl' with facts which "solve problems and answer questions the student does not have,' the teacher would do better to encourage him to work on real problems arising out of his needs and purposes This is not to minimize the importance of facts and of the skills whereby facts can be located But facts by themselves are relatively sterile Facts are means, not ends the child, therefore, needs to know where they lead and the emphasis should be on the use of these facts in reasoning in connection with new problems rather than on their mere accumulation Research [402] has shown that there is a low correlation between knowledge and ability to apply this knowledge in a reasoning situation and while the individual cannot reason without knowledge, the mere possession of knowledge will not guarantee that he will be able to reason with it especially if the material is merely memorized in order to pass an examination The student must be encouraged to ask *why* and *how* rather than *what* not only is this necessary to ensure his progress in school, but it is also an important attribute he needs to have in later life

Since problems cannot be solved in a vacuum, the school, besides creating problems for the student to solve, must help him develop the skills whereby he can do so, as well as provide him with the experience he needs In this way, he can not only increase the effectiveness of his reasoning but, as a result, can learn new things which, in turn, will lead to more effective reasoning in future situations Thus, reasoning is both a product of learning and a method whereby new learning can be had

The specific skills which the student needs to cultivate in order to become more effective in problem solving are difficult to agree upon Thus, the formal steps of reasoning as presented by Dewey would rarely, if ever, be used, except when thinking reaches the proportion of scientific investigation as in the case of a complicated experiment Such a formal approach may actually be stifling to successful problem solving as it puts emphasis on the method instead of on the problem where it should be Likewise, stereotyped formulae of the what-am-I-to-find, what-am-I-given variety are generally indicative of a rigidity of approach which is inimical to successful reasoning The student should also be discouraged from using cues such as "difference means to subtract" since they put problem solving on a mechanical basis In the same way, a lab manual should not encourage a blind stereotyped adherence to a step-by-step routine solution of science problems This is not to say that students should be left to reason in a haphazard fashion on the contrary, they should be encouraged to develop for themselves or to adopt some reasonably systematic approach to problems, but it should not reach the point of rigidity

Probably even more important in the school's attempt to promote reasoning on the part of students is the creating of a motivation in that direction The school needs to foster a critical—scientific—attitude on their part, a willingness to ask "Why?" and to find out their own answers Students in grade and high school and even in college at both the undergraduate and graduate level are often lacking in this respect They want to be provided with pat answers and are likely to be annoyed and adopt the he-won't-help-me attitude when their questions are thrown back at them with a "What do YOU think?" Actually, getting pat answers is much more reassuring to the student who has been kept dependent on the teacher or the textbook for his answers When his curiosity and initiative have been blunted, he is easily satisfied with a pat answer and he prefers being told to having to dig up all the complications, exceptions, and provisos Especially, when very often he wants to know simply to pass the examination, in which case the expedient thing to do is to find out what answer the teacher will accept on the test However, unassimilated material is completely unavailable for reasoning as is well brought out by James' well-known story told in the following quotation [191]

> A friend of mine, visiting a school, was asked to examine a young class in geography Glancing at the book, she said "Suppose you should dig a hole in the ground, hundreds of feet deep, how should you find it at the bottom—warmer or colder than

on top?" None of the class replying, the teacher said, "I'm sure they know, but I think you do not ask the question quite rightly Let me try " So, taking the book, she asked, "In what condition is the interior of the globe?" and received the immediate answer from half the class at once. "The interior of the globe is in a condition of igneous fusion "

Unfortunately, some teachers actually discourage problem solving To be sure, it takes a great deal more intelligence, ingenuity, originality, and competence to use the problem-solving approach effectively than it does to rely on a page-at-a-time routine But, whereas the latter restricts the student's progress more and more, the former puts his growth on a self-perpetuating spiral, for once accustomed to solve his own problems he is no longer satisfied with ready-made answers and he resents being denied the opportunity of solving things for himself Teachers can encourage problem solving by asking leading questions rather than supplying answers, by refusing to accept either in class or on examinations pat answers given verbatim from the book or from class notes, by having students validate their views in terms of agreement with other viewpoints and in terms of the implications these views would have, and by insisting on the clarification of terms and concepts used in reasoning They should, at all times, emphasize the "if   then approach as a means of discouraging both superficial thinking and glib memorization of material that can be understood

The group situation is particularly conducive to the encouragement of problem solving Thus a group working at the solution of a common problem is likely to come up with more hypotheses and to have more experiences to bring to bear on the evaluation of such hypotheses and on the devising of effective plans of attack But the group's greatest contribution to problem solving lies in the area of social reinforcement which permits interstimulation of the members from the standpoint of ideas and forces each member to make his best contribution toward the attainment of a group solution For the group to be effective in promoting problem solving, it is necessary to establish cohesiveness and group morale and an atmosphere sufficiently permissive so that each member is free to make his contribution—no matter how silly—without fear of losing status Otherwise, the energies of members will be dissipated in protecting themselves rather than mobilized toward the solution of the problem Furthermore, although the optimal size of a group would depend on the complexity of the problem to be solved (and hence the need for a variety of ideas) as well as the extent to which the members are integrated into

a functional group, the group should generally be rather small When the group becomes too large, individual members are denied the opportunity of making their contribution which leads to a waste of the group's resources and to apathy on the part of members who come to feel that the group can get along without them It is also much more difficult to get a big group to pull together and to work hard at the common goal because the individual member is more likely to lose that personal sense of responsibility

Because members are not likely to have too great a sense of personal responsibility for the solution of a problem, reasoning is not promoted by autocratic classroom management In many cases, students have little to do in the selection of the problem and, consequently, there tends to be a feeling that it is the teacher's responsibility to solve it—or to show them how to solve it—rather than theirs As a result, their reasoning will tend to be superficial, for they fully expect the teacher to point out the more complicated aspects Perkins [295], for instance, found pupils in teacher-centered classes to have as many facts as those in pupil-centered classes but to be less able to support their views The pupils in the teacher-centered classes also displayed a lack of spontaniety, of morale, and of cohesion This apathy on the part of the students is well known to some teachers of mathematics, who daily have numerous students who 'had difficulty' with the problems assigned the day before—and who think that having the teacher solve the problems for them is the natural thing to expect

Meaning

The gradual shift that has taken place in educational practice over the last couple of decades from an emphasis on memory and drill to an emphasis on understanding and meaningfulness has been, from a psychological point of view, one of utmost importance for it represents a realization on the part of educators that, without meaning, all that goes on in the classroom under the guise of education is of no avail More specifically, this shift toward meaningfulness represents an awareness that meaningful material is [a] learned more readily, [b] retained longer, and [c] more readily available for transfer to novel situations It must be noted that emphasis on meaning also implies emphasis on reasoning as discussed in the previous section for reasoning clarifies meaning, and meaning, in turn, permits effective reasoning

NATURE OF MEANING

Civilized man has come to rely to a tremendous extent upon symbols —especially verbal symbols—and this is particularly true in the classroom where language is almost the exclusive medium of instruction Thus, words, or more correctly, a sequence of letters and sounds have by common agreement gotten to mean a certain object, event, or relationship, to symbolize specific experiences and meaning, or to express relationships among experiences Because they are so easily managed, such symbols are effective means of classifying as well as communicating our experiences and they are indispensable tools in the process of reasoning, particularly at the higher levels Symbols make possible not only dealing more effectively with tangible objects but also with nonexistent or hypothetical things, relationships and concepts Modern scientific advances such as atomic power and intercontinental ballistics would hardly have been possible without the use of mathematical and scientific symbolism In fact, even in the area of tangible objects, meaning is not restricted to their objective aspects and characteristics, thus, money, in addition to referring to a medium of exchange, also means prestige

PROBLEMS IN DEVELOPING MEANING

Symbols can mean only what they represent in our experience Hence, meaning lies in the individual and not in the symbol Furthermore, adults cannot convey meaning to the child, he must construct his own meaning out of his experiences In fact, whereas meaning depends on the organization of experiences, it is the learner s organizing of his experiences that counts the teacher's logical organization of the material and the experiences of the curriculum is important only to the extent to which it facilitates the organization which the learner must do for himself Furthermore, since the learning that takes place is dependent upon one's experiences, it follows that the more the latter carries into a situation the more he is likely to derive—and conversely, when his experiences are meager, his understanding will be correspondingly vague Thus, the person born and raised in Florida has considerable difficulty in getting accurate meaning out of the word *blizzard* Many a farm boy has a very inadequate idea of a skyscraper while many a city youngster wouldn't be too clear as to how large a large ranch really is And, of course, many people have very vague ideas as to the size of an acre, for instance

We can sometimes extend the learner's experience so that he gets at least a vague notion of objects he has never perceived and experiences he has never had Indeed we must if he is to learn anything Thus, a Brahma

bull must be described to a person who has never seen one by relating it to an ordinary bull, or a cow, or perhaps a horse, or eventually any animal with which he has had some experience Of course, this process of relating one experience to another always carries the danger of inaccuracy and general vagueness, the use of pictures, for example, might lead the student to conceive of a Brahma bull as being the size of a dog

Fuzziness in meaning is not the monopoly of children In the case of adults, as well as children, there are various degrees of clarity in meaning depending on such factors as [a] mental development, [b] previous experiences, [c] interest and motivation, [d] difficulty of the concept, and [e] terminology in which the concept is presented It is probably true that rarely are meanings complete, even in a restricted area We generally see only one side of an issue, we fail to relate our experiences to all the other experiences to which it could be related, we fail to see some of the implications Thus, it is probably true that few adults really understand the concept of democracy in all its implications On the other hand, children are even more likely to possess inadequate or incorrect concepts for, in the course of the average day, they are expected to make a large number of constructs, many of which are of considerable difficulty in relation to their intellectual and experiential background Thus, we have come to expect the occasional boner or the expression of half-baked ideas as something normal and unavoidable when in reality they reflect nothing more than failure on the part of the teacher to communicate with the children whose growth he is being paid to guide As stated by Horn [185]

> A critical and realistic consideration of those unfavorable conditions make it appear that the inadequate and erroneous conceptions formed by pupils in various curricular fields, far from being something to wonder at, are precisely what one should expect For while, of course, instruction is not deliberately planned to foster the development of inadequate and erroneous ideas, it is, nevertheless, organized in such a way that those results are sure to follow

The same viewpoint is expressed by Morse and Wingo [275], who state that, while occasional boners may be funny, there is nothing funny about an educational system that systematically produces them

Since we interpret symbols in terms of our experiences, the use of symbols is predicated upon the presupposition that the listener has had an experiential background sufficiently similar to that of the speaker so that the symbols evoke from him the proper expectations Unfortunately, this presupposition is frequently not valid in the classroom situation, espe-

cially when children of a different culture or socioeconomic class are
involved Language is so easy to use that it is dangerous, in that it can
be used to replace meaning Our schools have been entirely too verbal
and bookish, and the child is often virtually swamped with a flow of
words and other symbols concerning which he has no experience—
symbols he has to memorize rather than understand, in order to meet
examination requirements Soon the confusion reaches such Babelic pro-
portions that the child has no choice but to rely more and more on parrot
memory

As was pointed out by Thorndike [388], getting meaning out of a
textbook is not easy The child must first perceive the word and recognize
it any error or difficulty here is likely to garble the message Then he
must determine the meaning of the words he has read, select from his
experiences the meaning to be associated with each, and organize these
experiences into their proper relationships to give meaning to the para-
graph Where individual words have multiple meanings—and some words
have a dozen or more different meanings—he must withhold judgment
as to which meaning is relevant in the particular case by relating its pos-
sible meanings to the context of the passage Add to this the fact that
vocabulary loads are often excessive, that the choice of the vocabulary
used is not always the best and one can get an idea of the difficulty con-
fronting the learner when he attempts to develop clear meanings To com-
plicate the situation further, the average text or course contains too many
ideas to be assimilated Ritter [307], for example, found some twelve
hundred technical terms used in fourth grade geography, some with
double meaning There is general consensus among authorities that,
whereas the average text is all right for the experienced person, it con-
tains so many new words that it is almost impossible for the beginner and
especially the below-average child to acquire the new vocabulary of say
a course in science, let alone understanding the meaning of the content
and its relation to actual problems In fact, many studies of the reada-
bility of textbooks have indicated that the material in many of them is too
difficult for the group for which it is intended

Symbols facilitate the manipulation of ideas and experiences How-
ever, the use of symbols degenerates into verbalism when the learner has
a word or symbol but does not have the corresponding experience or
referent The child, for example, may be able to verbalize a given con-
cept, e g , recite a theorem in geometry, or use a certain term without
necessarily comprehending its meaning, for the manipulation of a sym-
bol (unlike the manipulation of an object) does not lead to its clarifica-
tion Teachers need to realize that much of the difficulty the child en-

counters in learning classroom material stems from the fact that he does not have the experiences which would make meaningful many of the symbols with which the classroom deals

IMPROVEMENT OF UNDERSTANDING

Many of the understandings of the average child or adult are vague and even self-contradictory thus, people who 'believe in democracy" harbor strong prejudices against minority groups, others who 'believe in honesty" see "nothing wrong" with loafing on the job Children often misbehave because they fail to see a certain act as a violation of a given rule In fact, clinicians make a living out of the inconsistencies in belief and behavior of their patients Complete understanding is, of course, difficult to achieve if we define complete understanding in terms of the grasp of facts and concepts and their complete integration and organization into the larger wholes of which they are a part Woodruff [424], for instance, mentions three stages in the development of understanding [a] the assimilation of the facts and ideas that constitute the subject matter, [b] the organization and integration of these facts into larger meaningful wholes, and [c] the development of the ability to use these facts and ideas in new situations Unfortunately, the child—and particularly the dull child who is less capable of interrelating his experiences —frequently stops at the first stage and, on many occasions, does not even master this stage

Bearing directly on this problem is the criticism often heard that teachers teach facts rather than understandings and, sad to say, it is only too true that some teachers are apparently unaware that the mere accumulation of unassimilated facts serves to confuse the child rather than to facilitate his reasoning or help clarify his future experiences Teachers stress facts, often in isolation of the things that would give them meaning, and the child, frequently concerned only with getting sufficient meaning to pass the examination, relies on memory rather than understanding In fact, teachers sometimes discourage understanding by giving a higher grade to the student who parrots the words of the book (often without understanding) than to the one who understands but whose answer, being in his own words, is not as polished as that of the text

Actually there can be no objection to teaching facts since, without facts, reasoning, understanding, applications would be impossible What is objectionable is that children are taught not facts but mere words, which they do not understand and which they can use only on the examination Mursell [278], for instance, points out that there can be no

quarrel between facts and understanding since to know a fact is to understand it The solution then lies, not in refraining from teaching facts but rather in teaching facts in such a way that they are understood and available for subsequent understandings Thus, rather than stressing memorization, the teacher must see that the child has the concrete experiences on the basis of which facts can be understood, and he must encourage him to utilize these facts in situations that are real and meaningful to him Concrete experiences are essential to understanding On the other hand, excessive reliance on concrete experiences can be as fatal to understanding as excessive reliance on symbols, and, whereas the teacher needs to see that the child has concrete experiences backing up the symbols which he uses, he also needs to encourage him to organize these experiences in terms of symbols, for, unless they are related together according to some principle or concept, they will remain isolated and unassimilated and, again, of no value in promoting a greater understanding of later experiences

The difficulty in promoting understanding stems from the complexity of the concepts to be learned, the nature of the language in which they are expressed, and the ability, motivation, and experience of the learner It follows that efforts to improve the clarity of the child's understanding have to be oriented toward improvement in one or more of the above problem areas and we turn to a discussion of these in the next few paragraphs

[a] Curriculum makers have been trying to minimize the difficulty of the concepts a given student has to learn by delaying their introduction till he is ready Thus, numerical concepts are introduced only informally in the primary grades, and decimals and fractions have been pushed into the upper elementary grades Of course, not all education can be delayed to the senior year in order that constructs to be made by the child will be relatively more simple in view of his increased readiness Such postponements, at best, are only a partial solution

[b] A number of issues are involved in improving clarity of understanding through improving adequacy of presentation First the number of new and complicated words might be reduced Some people have a flair for using five-syllable words when two-syllable words would be just as adequate, and there are, no doubt, many instances in which the vocabulary is unnecessarily complicated This problem has received considerable attention in recent years as more stress has been placed on readability It has been found, for instance that such masterpieces as the Gettysburg Address call for a reading-grade level of 6 5 [242], while relatively trivial material is often couched in language that would call for advanced training in law On the other hand, simplification of the

vocabulary is not an entirely adequate solution different shades of meaning call for the use of different words and the use of a single word to express different meanings will only add up to confusion Thus, *wait* cannot be used synonymously with delay, longer, tarry, or loiter, and any attempt to use them synonymously will distort the meaning Nolte [281], for instance, found simplification of the vocabulary did not make reading passages significantly easier to understand

Understanding is, of course, facilitated by clarity and effectiveness in the use of the language Occasionally, people are accused of speaking or writing all around the topic without ever making clear what they have in mind, or of going to the point by way of all the most confusing details Teachers and writers of textbooks are not exempt from this failing To some extent, clarity in expression is related to clarity in thinking and the more familiar one is with his topic the more clear he can make his explanations It is also true that teachers, if they are to be effective in the classroom, need to develop a certain verbal facility that will permit them to convey ideas clearly and concisely On the other hand, it remains unavoidably true that complex ideas tend to call for complex explanations

Understanding is also promoted by using different approaches in presenting the material Thus, using many examples in different settings so that the learner can, through the process of contrast, isolate the relevant from the irrelevant and the essential from the incidental is likely to lead to clearer understanding than is emphasizing only one example or illustration Likewise, the student should generally read many different sources rather than dwell exclusively on the basic text

[c] Probably the most effective method of improving understanding is in connection with the ability, motivation, and experience of the learner Thus, any attempt to lower the vocabulary level of instructional material needs to be accompanied by a corresponding attempt to raise the vocabulary level of the child This is best handled through vocabulary drill based on meaningful experiences as opposed to meaningless definitions committed to memory (although there may at times be need for memorization in order to hold a certain word or concept until its meaning can become more clear) The school also needs to make a deliberate effort to enrich the experiential background of students—especially by means of firsthand contacts with their environment or by means of various aids where more direct experience is not possible—so that they will have something to which to relate their material

Increasing the learner's motivation is also likely to result in greater understanding through the extra efforts he is likely to devote to collecting

data and to synthesizing the many details into structural unity The child who is sufficiently interested is more likely to use the dictionary in clarifying meaning rather than to rely on the context to give him the general idea, for example

The self-concept is also an important factor in this connection Note, for instance, the boy who is attempting to put together a model plane or who feels that his status as a boy calls for his knowing about motorcycles He will want to know the purpose and the operation of the carburetor for it has meaning for him—it is no longer just a word from his spelling lesson Not only will he read about internal combustion engines but he will also understand a great deal of material which is, by all standards, rather difficult This despite the fact that in most subjects in school he has difficulty in understanding even simple material On the other hand, a student may be prevented from gaining an understanding of certain concepts because they have an emotional tone which prevents him from devoting his whole attention to clarifying their meaning or because they do not fit in with his system of values and purposes Thus, Sutherland [376] found that changing a problem from one dealing with the number of pupils to one dealing with tons of linseed oil resulted in markedly different performance Likewise, the adolescent boy may be handicapped in his understanding of poetry by his views of poetry as sissified

There is not much teachers can do about raising the intellectual level of the learner, but they should realize that extra help will be needed in the case of the duller child if comprehension is to be achieved Research has shown that good students get as much out of one reading as poor students get out of two readings and that the lowest 10 percent in hearing comprehension gain little more from three hearings than the top 10 percent in a single hearing [143] Research has also shown that those children who have difficulty in understanding what they read also have difficulty in understanding what they hear Young [133], for example, found correlations of over 80 between understanding through reading and listening, and it seems reasonably certain that many of the reading problem cases are actually more correctly problems in obtaining meaning from verbal symbols resulting from a lack of mental ability or experience and that phonics, eye-movements, and other remedial work in reading have been greatly over-stressed What it amounts to is that the poor student is very often unable to get much out of either his text or the lectures and that, unless special help is provided, he will soon become thoroughly confused as he piles unassimilated material upon unassimilated material

DEVELOPMENT OF CONCEPTS

The mere accumulation of experiences is of little value by itself, for experiences become meaningful only to the extent in which they are organized and related to previous experience Thus, the young child, seeing various animals for the first few times, is not able to determine what to expect from each until he manages to categorize them as cats and dogs In order to do this, he must first identify the elements of each situation and then pick from the many elements the common aspects that cause dogs to belong to the dog category and cats to the cat category, in other words, he must resort to the complementary processes of *abstraction* and of *generalization* This is a slow process and adults should not expect complete clarity on first presentation, for the clarity of one's concepts depends on the clarity of his previous concepts, and it is only as deeper understandings develop that more and deeper distinctions can be made

In order to facilitate the process of helping the child clarify his concepts by relating them to his previous experience, it is necessary to present the essential elements of the situation among a reasonable variety of nonessentials, but it is probably best not to clutter the presentation with such an excess of details that the essential aspects are completely hidden On the other hand, a sufficient number of details should be presented so that the picture is not left incomplete Thus, too many details lead to a waste of time while too few lead to incomplete understanding and to verbalisms It is rather difficult in view of the differences in ability and background among students to decide the point at which the optimal degree of explanation has been given It is generally well to present an overview, a framework into which the details must fit if they are not to become the trees that prevent the learner from seeing the forest Thus, teaching of the concept *democracy* may be made unnecessarily difficult by introducing in the first lesson all the complications involved in electing a president or a prime minister But, if reference is made only to such democracies as the United States, England, Canada, and Australia, the student may be led to infer that only those countries in which the English language is spoken are democracies

The teacher must make the essential elements conspicuous in different interrelationships and give students practice in outlining and in seeing the various aspects of a situation in relation to each other and to previous learnings, for relationships and not elements make the concept It is generally better to consider the concept to be developed from different viewpoints, as might be found in different sources, rather than to make an intensive study of a single source Likewise, studying by wholes

is more conducive to the formation of clear concepts than studying by parts, since it makes for a greater degree of continuity and emphasis on the interrelationships among the ideas Furthermore, if the child is to develop clear concepts, it is necessary for the teacher to insist that he use these concepts accurately in connection with their applications and implications in related situations

The teacher should also guard against children viewing concepts as new words to be committed to memory Many word-lists in spelling, for example, are not related to anything in the child s experiences and involve nothing more than arbitrary associations As such, they are essentially nonfunctional In the same way, one often hears claims about learning ten words a day as a means of increasing one s erudition Actually, although meaningful vocabulary drill can increase one's vocabulary, trying to study wholesale new words that have no basis in one's experience is rather futile not only will they soon be forgotten but they are of no value since only functional information can be used in the solution of day-to-day problems

Creativity

NATURE OF CREATIVITY

Creativity is so closely related to the topic of problem solving and reasoning that the term *creative thinking* is often used to refer to the process The person who creates—whether the product is in the area of the literary, the artistic, the scientific, or the practical—goes through essentially the same process as in reasoning, with the possible difference that a greater emphasis is placed on the novelty of the solution to the problem and different technical terms are used in describing the process Thus, whether Archimedes' "solution" is an example of problem solving or of creativity is a matter of debate The distinction between problem solving and creativity becomes even more vague when we realize that the individual who discovers for himself the solution to a problem which is known to others is displaying some degree of creativity even though his solution would not be accepted by others as an invention or a discovery Similarly, the child writing a theme or making a figure out of clay is being creative even though his production may not be accepted as a masterpiece or even as original

Because of the similarity of creativity to problem solving, it is possible to discuss creativity in terms of the same steps or stages of scientific

thinking previously mentioned However, a somewhat more meaningful description of the process can be given in terms of such steps as preparation, incubation, illumination, and verification This organization, which is used by most authors on the subject, will serve as the basis of the present discussion

Preparation Creativity has to be oriented toward a problem On the other hand, whereas problem solving is generally effective to the extent to which the individual has a well-defined problem, creativity very often stems from a general problem area in which the individual is interested and in which he has a thorough grounding Thus, whereas inspirations sometimes appear suddenly, the literary creations come to the poet or the writer and not to the engineer, while productions in the area of art come to the artist who has spent a good deal of time studying the field Sir Walter Scott, for example, would never have created the particular literary masterpieces which he did had he not spent years in his youth becoming familiar with Scottish folklore, nor would Edison have invented what he did had he not devoted his whole life to the field of science

Incubation It is not at all unusual in the area of creativity to have the inspiration come, not while the person is actively seeking it, but rather after a period of time in which the individual, having become thoroughly familiar with the field and having attempted in vain to get an idea, has put the whole thing aside This phenomenon is, of course, not peculiar to the field of creativity it is not uncommon, for example, to be unable to recall a name even though at the tip of one's tongue, only to have it come spontaneously when he is no longer trying to remember— or to have the solution to a problem come unexpectedly after the individual has temporarily given up his search Such situations can probably be explained on the basis of selective forgetting and the removal (through relaxation) of an improper mind-set while a person is deliberately seeking an answer to his problem, he is likely to get into a rut and continue exploring the same fruitless avenues, and the more anxious he becomes as a result of his failure to find the solution the more likely he is to develop rigidity in approach (tunnel vision) and even fatigue that will interfere with clear thinking A period of rest and relaxation during which the person simply lets his mind wander freely very often provides the opportunity for a new organization to be formed Composers and inventors often find inspirations come to them as they take a walk or daydream [3] It is said that Mozart kept a pad of paper at the side of his bed to jot down any inspiration that might come to him during the night

Illumination This period of incubation is generally followed by an idea or suggestion This inspiration sometimes evolves gradually after a period of considerable trial and error and, at other times, comes suddenly in the fashion of insight

Verification Once an inspiration has been hit upon, it has to be evaluated in the light of reality It is not uncommon, for instance, for the would-be creator to see on second thought that his brain child will not work because he has overlooked some basic fact or principle An inspiration for a house plan may have to be rejected when the architect suddenly realizes that his idea of locating the stairs at one place would be ideal from one standpoint but would be completely impractical from another Very often this verification leads to further preparation and incubation and eventually to another inspiration and to a better creation Thus, we again see, as we did in connection with problem solving, that, despite the fact that the steps of creativity are listed in a 1–2–3 sequence, in practice there is much back-and-forth movement among them and that creativity also involves a certain element of trial and error as well as insight.

PROMOTING CREATIVITY

In view of the essential nature of creativity from the standpoint of the progress of society as well as the self-realization of the individual, the school should consider the promotion of creativity one of its primary responsibilities Contrary to the common view prevailing some years ago, everyone is capable of creativity this does not mean that everyone is capable of producing what might pass (according to objective standards) as a masterpiece, but since creativity is nothing more than an aspect of self-expression, creativity is a matter of degree Certainly, people cannot be classified into a dichotomy—those who are creative and those who are not Thus, whereas by objective standards one's production is creative when it is [a] original and unique, and [b] universal, i e , relevant to a known problem, the school is simply concerned with having the child express himself in a way that is novel to him—and everyone can draw, paint, design a dress or a house, write a theme or a letter even though, for most people, none of these productions will ever gain national acclaim

Probably the greatest deterrent to creativity on the part of the child is adult insistence on perfection and conformity to adult standards Whereas emphasis should be on the process of self-expression, adults are usually concerned with the product—and often simply in pointing out the inconsistencies and the errors rather than in praising the child for the ideas behind it and for the attempt made With our concern for perfection in the product we not only rob the child of the decision of what he

wants to do but also of how it should be done and what the finished product should look like With our criticisms when the child's production does not come up to our standards of excellence—very often when he is not ready to meet those standards—we discourage him with the result that, whereas the young child has no limit to the ideas he wants to express through drawings, in the middle grades he will not want to draw anything

This not to deny the importance of certain basic rules, whether in the way of mixing colors or of organizing a theme, but very often originality in content is stifled by emphasis on conformity to adult form and technique, as a result, children can write or draw from the standpoint of form but they are lacking in originality In other words, as a result of the education they receive, children become correct from a technical point of view but dead from the standpoint of creativity The same theme is presented by Guilford [159] who points out that present day mass education may be discouraging to the development of creativity and that an inventor is one who "doesn't take his education too seriously " He also quotes Kettering [207] to the effect that the probability of an engineer making an invention is half that of a nonengineer [4]

Implied in the previous paragraph is the definite relationship that exists between creativity and personality Whereas intelligence and a thorough grounding in one's field are important, perhaps as essential are motivation, versatility, and unwillingness to fit into a mold It is possible, for example, that the apparent superiority of men in the area of creativity and problem solving may be due to their being more nonconforming, daring, and adventuresome Generally, the insecure automaton is not creative regardless of his brilliance and his competence the insecure person is usually too characterized by rigidity in approach (tunnel vision), by an overconcern over his adequacy, and by a negative self-concept to be able to create To the extent that he cannot afford to make a mistake, he cannot afford to try new approaches It, therefore, follows that, if the school is to encourage creativity, it must promote security among children Not only must the teacher foster an atmosphere of permissiveness and acceptance so that the child can try novel ideas even if they fall flat, but he must also be willing to tolerate a certain departure from tradition on the part of students It is, of course, necessary that the teacher himself be original, flexible, and enthusiastic and that, in his teaching, he emphasize experimentation and discovery rather than routine

[4] This argument may involve a fallacy in that individuals who, despite the very definite handicap of not having a college degree, reach high-level positions where they can put their talents to inventing are probably of very superior ability

Another important attribute of the creative person is willingness to work hard and to not be discouraged by the elusiveness of the glamor of invention As we have seen, inspiration is generally preceded by hours of toil and hours of incubation In fact, the lives of the great inventors include outstanding examples of untiring work and also opportunity for meditation Perhaps the boy whose mind has wandered during the science lesson may be the next James Watt If we succeed in making material vital to him, we can expect the child to spare no effort in organizing it so that it will lead to creativity and problem solving

HIGHLIGHTS OF THE CHAPTER

Despite the fact that understanding and problem solving are essential to the survival of democratic society and the fact that psychologists have come to recognize more and more the importance of meaningfulness in promoting learning and effective behavior, much of the emphasis in the classroom, unfortunately, is still upon the memorization of half-digested facts True education has to emphasize the higher mental processes and the modern teacher, if he is to be effective, needs to be conversant with the following concepts discussed in the present chapter   .

[a] Except for a greater emphasis on insight (or hindsight) and understanding, problem solving is an aspect of learning subject to the same laws as other forms of learning previously discussed

[b] Problem solving is best understood in terms of Dewey's steps of scientific thinking, namely, [1] problem, [2] clarification of the problem, [3] hypothesis, [4] elaboration of the hypothesis, [5] testing the hypothesis, and [6] generalization

[c] Problem solving can be fostered in the classroom by conducting the class activities in such a way as to encourage the child to develop [1] an adequate background of experience, [2] effective problem-solving skills, and [3] an interest in seeking the answers to his own questions

[d] Of particular importance from a psychological point of view is the recent shift in pedagogical practice from drill and memorization to an appreciation of the role of meaningfulness in promoting effective learning as well as greater retention and transfer

[e] Civilized man relies to a great extent upon symbols to help him

convey ideas This is particularly true of the classroom where language is almost exclusively the medium of instruction

[f] Unfortunately, symbols can mean only what they represent in the individual's experience and, when the child is lacking in such experience, boners, verbalism, and misunderstandings are likely to result

[g] Much of the difficulty the child has in getting clear meaning stems from the complexity of the concepts which he has to develop (from the standpoint of his mental development and his background of experience), the degree of adequacy with which they are presented, and from the large number of such concepts which he must form

[h] Meaning can be improved by delaying the presentation of difficult concepts till the child has greater maturity and experience, by improving the adequacy of presentation, and by increasing his readiness

[i] Creativity is an aspect of problem solving although it is probably best understood in terms of the following steps [1] preparation, [2] incubation, [3] illumination, and [4] verification

[j] Everyone is capable of creative activity Probably the greatest enemies of creativity on the part of the child are adult insistence on perfection and conformity to adult standards, on one hand, and insecurity and intellectual laziness, on the other

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QUESTIONS AND PROJECTS

1 Evaluate The most fruitful thing the school can do to promote reasoning in children is to encourage the development of attitudes of critical evaluation and a respect to truth

2 Can reasoning be improved when it is so nearly synonymous with intelligence?

3 Devise three multiple-choice questions designed to measure reasoning in connection with some topic of educational psychology

4 Should a separate course in logical thinking be required as part of the work for a degree? Support your opinion

5 Describe life in an American college to a pen pal in Japan or Alaska, or even on a farm Note the difficulty in conveying meaning

6 What is the role of technique in creativity?

13

Attitudes

EDUCATORS ARE BECOMING PROGRESSIVELY MORE AWARE of the importance
of attitudes in the over-all educative process Whereas up to the turn of
the century, schools existed primarily, if not solely, for the purpose of im-
parting knowledge and skill, it has become evident that the attitudes
that come as by-products of whatever is taught are often of much
greater importance than the primary learning from the standpoint of
both the academic progress of the learner and the effect it will have
throughout his life It has been realized, for instance, that many teachers
in the past, in their eagerness to force some learning down the child's
throat, whatever the cost, have only succeeded in fostering attitudes com-
pletely antagonistic to those upon which his long-term welfare and that
of society depend

Nature of Attitudes

IMPORTANCE OF ATTITUDES

The importance of attitudes from a psychological point of view can be understood through a clarification of their nature and their relationship to the concepts discussed in Chapter 2 Attitudes may be thought of as learned patterns of behavior which predispose the individual to act in a specific way when confronted with a given situation A more comprehensive definition is that of Allport [3] who defines attitudes as

> a mental and neural state of readiness organized through experience exciting a directive and/or dynamic influence upon the individual's response to all objects and situations with which it is related

These definitions place attitudes in the framework of the concepts of set needs, drives, and motives and, consequently, point to the fact that they constitute a basic and functional aspect of the individual's motivation and his self-concept They are also closely related to emotions, in fact, they can be defined as emotionally toned ideas, a definition the validity of which becomes apparent from even a cursory analysis of such attitudes as prejudices, for example

Attitudes tend to be definite and specific from the standpoint of the object to which they pertain and the value to which they are attached They differ, therefore, from ideals which tend to be more conscious and somewhat more generalized, thus, tolerance toward a certain minority group is an attitude whereas tolerance as an abstract concept is an ideal To some extent, both attitudes and ideals imply generalization and individuals who are limited in their ability to generalize may have to rely on habits which are less broad and, hence, influence a smaller and more specific segment of their life, or in technical language, ideals and attitudes have much greater transfer value than habits In fact, ideals and attitudes permeate our whole life as we readily see when we realize that our self-concept is essentially the sum total of the attitudes and the values by which we live Thus, the individual who considers himself honest simply has favorable attitudes toward the class of experiences involving honest behavior whereas the adolescent who considers himself a tough has negative attitudes toward the codes of society, toward law enforcement Consequently, the cultivation of favorable attitudes toward certain values which society treasures is tantamount to promoting behavior in

line with the code and mores of the social order In the same way, promoting favorable attitudes toward a given school subject is the equivalent of encouraging the student to pursue this subject further

The importance of attitudes and ideals from the standpoint of the school cannot be overestimated In view of the extent to which they dominate our whole behavior it becomes evident that education can have no greater goal than the fostering of sound and constructive attitudes and ideals

From a more academic point of view, attitudes are directly related to learning not only do they develop as a result of the satisfying or frustrating nature of our learning experiences but, once established, they facilitate or impede further learning and, thereby, become self-reinforcing

Furthermore, attitudes tend to spread from the situation or object to which they are attached to related situations to the point of growing (cancer-like) over wider and wider areas Thus, the boy, whose teacher in an attempt to have him learn algebra uses harsh autocratic methods, soon develops a dislike for the subject and for the teacher which prevents him from doing well in the course, thereby leading to a reinforcement of his dislike for the subject and the teacher Soon this dislike extends to the whole school and even to the values held by the school No doubt various negative character traits, rebelliousness, and even delinquency are among the more or less natural adjuncts of an unsuitable curriculum forced upon students by autocratic methods In such a situation, the learning experience instead of serving as the basis for further growth is actually detrimental from this standpoint and may well have serious repercussions on the individual's whole life Hence, the statement that concomitant learnings that occur as by-products are often of much greater importance than the primary learnings themselves

DEVELOPMENT OF ATTITUDES

In view of the importance of attitudes, the school, if it is to fulfill its responsibility to society, cannot escape from its responsibility in embarking upon a deliberate campaign to influence for good the attitudes of children, i e , to reinforce positive attitudes and to alter negative attitudes Such a program of education is fully as important as anything else the school might be expected to do Children are going to form attitudes anyway—good or bad—and society cannot afford to be indifferent to the outcome We don't tolerate haphazard learning of academic skills and it just does not make sense to leave this most important phase of education to chance It follows that, if we are to assume responsibility for the area of

attitude development, we need to be familiar with the general nature of attitudes and the process by which they develop

The development of attitudes can be explained best on the basis of the process of conditioning, previously discussed in Chapter 5 As the individual is presented simultaneously with two stimuli, one of which is already associated with a given affective tone and the other neutral, he is likely to associate the feeling tone with what was originally the neutral stimulus Thus, the boy who comes out second best in a fight with another boy who happens to be foreign born may associate the dislike of the beating with the concept of a foreigner and develop an unfavorable attitude (prejudice) against foreigners as a class Likewise, a student's
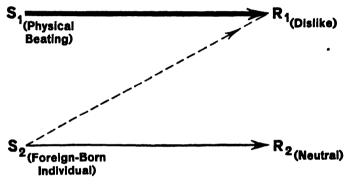
Fɪɢ 13 1 *The development of attitudes*

dislike for a certain subject may be related to the way it is taught, to the instructor of the course, or some unpleasant episode that occurred in connection with the course

Conditioning probably explains the fact that close friends and relatives have relatively similar attitudes [1] Actually, a selection process may also be involved in the similarity of attitudes among friends, i e , one might hypothesize that people choose as friends persons who have similar attitudes regarding major issues Nevertheless, it is very likely that friends influence each other's attitudes and, in the case of relatives, it seems clear that the similarity of attitudes noted is probably best accounted for in terms of learning Both Lasker [227] and Reimann [303], for example, after analyzing many instances of prejudice, concluded that such attitudes are generally transferred unconsciously to children by adults and playmates The child, for example, probably derives some

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[1] Conditioning can be considered a special case of the application of the law of effect

sense of belonging by reacting toward various minority groups in the way his parents and siblings do and the adolescent often feels some compulsion to adopt group views as a price he must pay for belonging For this reason, individual attitudes depend to a great extent upon group attitudes

It should be emphasized that, since the development of attitudes involves learning, their formation and maintenance are subject to the same principles and laws as those which govern any other form of learning Attitudes are learned when they satisfy a need It is, therefore, understandable that differences in attitudes can be expected with differences in sex, age, socioeconomic status, and cultural and experiential background Once developed and incorporated into the self-image, attitudes force the individual to react in a way consistent with his present self-image the child who has a favorable attitude toward school and teachers is not likely to misbehave for to do so would lead him to internal conflict Thus, only those attitudes that are consistent with the individual's present self-concept are learned and they, in turn, serve to restrict the individual from the standpoint of the ways he can satisfy his needs in the future

Attitudes tend to develop incidentally, gradually, and generally unconsciously [2] They arise as by-products of the experiences the child undergoes and, conversely, everything that goes on in the classroom as it affects the child leads to the formation on his part of certain attitudes If the teacher is pleasant, is enthused about his subject, sensitive to the needs of his students, the child may develop favorable attitudes toward the class and all that goes with it—the subject, the teacher, the school If the teacher is cranky, on the other hand, the child may well develop negative attitudes toward the school and all it stands for And these attitudes will remain when all the subject matter will have long been forgotten—especially as much of the academic content of the average course is only remotely related to the child's goals and purposes so that he is relatively impervious to it while, on the other hand, the aspects of the situation which lead to the formation of attitudes affect him in a vital way Thus, he may not care particularly about the dates of history or the theorems of geometry but he is definitely involved in the fact that the teacher makes him appear either stupid—or brilliant

What we are as a person and the way we act is generally more important in fostering desirable attitudes on the part of children than what we preach Positive attitudes cannot be developed as a result of a 15-minute

[2] Not only do attitudes develop unconsciously but, in some cases, e g , humility, they must remain at the unconscious level, if they are to exist at all

period set aside for attitude formation or citizenship if the procedures of the rest of the day constitute a negation of the principles involved any more than attitudes of fairness can be developed in the child when he is continually the victim of unfairness, or an appreciation of poetry can be developed in a class taught by a dull authoritarian teacher By the same token, positive attitudes toward democracy are not developed by lecturing about the glories of democracy when the whole tone of the class is autocratic all the child can get out of such a situation is the ability to verbalize the benefits of democracy and puzzlement at the hypocrisy and contradiction of it all

Since attitudes tend to be learned through identification with someone who has certain attitudes or whose behavior suggests adherence to certain values and since teachers are often used as models by children, it is imperative that they be carefully screened Whereas it is rather difficult to set forth definite criteria for judging the suitability of teachers from this all-important standpoint, it seems essential that they be relatively free from negative attitudes and that they be stable people whose integrity, sincerity, and loyalty to the things our society holds dear are unquestioned, who can embody such beliefs into living lessons, and who can use their prestige to inspire the child in the development of wholesome attitudes which will serve as a foundation for wholesome behavior It is essential that teachers exemplify the basic values of our culture However, since we cannot give the child attitudes—we can only arrange for him to have satisfying experiences that will lead to the formation of positive attitudes—we need to provide him with satisfying experiences with regard to these attitudes so that desirable behavior will become a pattern of life

Attitudes can be developed most successfully through meaningful participation in worthwhile activities designed to influence attitudes Thus, pupils with practice in self-government are found more favorably inclined toward the observance of laws than are pupils in schools not having self-government [296] Similarly, as we shall see, attitudes underlying moral behavior are not developed by preaching and having rules memorized but by providing the child with practice in integrating moral concepts into his total behavior patterns and, whereas part of this integration must involve a verbalization of the basis for one's behavior, sermons are of limited effectiveness

ATTITUDES TOWARD THE SCHOOL

An important set of attitudes from the standpoint of the basic function and purpose of education and the reason for the existence of the school concerns those attitudes which the child holds with regard to the

school itself and the values for which it stands Unfortunately, we have
not been too successful in this area eight or twelve years or more of
attendance in our schools has led a sizable minority of our students to
have anything but favorable attitudes toward literature, teachers, educa-
tion, schools, desirable behavior Schools should provide the tools and
the desire whereby the individual can promote his self-realization But,
whereas the individual's education should be just beginning when he
leaves school, many youngsters are, on the contrary, finished with educa-
tion the day they graduate or drop out They take with them a few facts
or skills but, all too often, the bonus in the form of a dislike for any kind
of learning—frequently accompanied by an emotional block—is by far
the most significant aspect of the total situation This, in Jordan's opinion
[200] constitutes a "pedagogical crime "

The reason underlying such negative attitudes toward the school
should be of primary concern to the teacher Barring unusual cases—
such as the child who has had emphasized 'Wait till you get to school,
the teacher will take care of you when you're naughty!"—most beginning
children consider going to school a pleasant adventure and the excite-
ment of a new experience makes them highly susceptible to the develop-
ment of favorable attitudes But, in a few short years—for whatever rea-
son—a good number of children don't like school, don't like teachers,
don't like what they are studying They attend only reluctantly for want
of a choice in the matter or for want of something better to do The school
needs to evaluate its offerings and its procedures to see if perhaps it is
not partially responsible for this state of affairs Favorable attitudes de-
velop out of satisfying experiences it is possible that, in many cases, these
unfavorable attitudes are direct outcomes of an unsuitable curriculum, of
rigid, frustrated and unenthused teachers, and other aspects of the
school situation for which the primary responsibility rests with the teacher
and other school officials and over which the child has little, if any,
control Unfortunately, administrators and teachers are very often un-
aware of unsatisfactory conditions in their schools and obviously chil-
dren are reluctant to voice a direct complaint since a complaint is easily
interpreted as a criticism of the teacher or of the school administrators
who, in the final analysis, are responsible for whatever unsatisfactory
conditions prevail And so the matter drags on and on with the morale
of the students dropping lower and lower A partial answer to the prob-
lem lies in allowing students periodically to express their reactions to the
program of the school, perhaps via an 'unsigned questionnaire such as
that compiled by Hand [165] which covers such aspects of the school
as the suitability of the curriculum, the morale of the school, the ade-

quacy of the school plant Sample items from his questionnaire are given
in Chapter 16

Research has shown that children from the lower socioeconomic
classes are more likely to hold antischool and antieducation attitudes
than those from the middle and upper classes [176] They frequently
harbor these negative attitudes even before they come to school Fur-
thermore, they get continuous reinforcement from their parents and sib-
lings, who hold similar views, in fact, they are likely to feel disloyal (and
guilty) if they like school On the other hand, the school very often de-
serves full credit for an "assist" in the development of these negative
attitudes by providing them with an unsuitable curriculum from the
time they enter first grade, by labeling them as dull because they are not
oriented toward schoolwork, and by continually punishing them when
they fail to internalize the values of the school, even though these
values are incompatible with those of their culture and socioeconomic
background, many schools only intensify these attitudes and cause them
to be transmitted from generation to generation Children who are pushed
to the limit day by day to learn things that are not only meaningless in
terms of their goals and purposes but often antagonistic to the orientation
of the home and community from which they come—frequently under
conditions of threat—are bound to develop negative attitudes that will
preclude success and set into motion a vicious cycle The frustration and
repeated failures to which such children are often subjected cannot fail
but produce a need for rejecting the school in order to maintain self-esteem
and self-consistency Having rejected the school in terms of some of its
values, they find it necessary to reject the school in all of its values and to
develop counterattitudes that are detrimental to them from both an im-
mediate and a long-term point of view

The teacher working with children from the lower class needs to be
particularly understanding and particularly adept at relating the cur-
riculum and his procedures to their needs and background He needs to
understand such children so that he can have his influence in the de-
velopment of attitudes harmonize with their present system of values as
the point of departure from which to foster more acceptable attitudes
In the meantime, he must realize that they are no more "troublemakers"
because they live out the values of their cultural group than are children
from the middle class who act according to the values of their home
backgrounds which happen to coincide with those of the school

The measurement of attitudes is of major importance to the teacher
who must guide their development and we ought to devote some time to
it On the other hand, the topic is relatively complicated and generally

beyond the scope of an introductory course in educational psychology
The student is, therefore, referred to such sources as the excellent dis-
cussions by Remmers and Gage [306], Remmers [304], and Edwards
[105]

CHANGING ATTITUDES

Attitudes, once formed, are relatively difficult to change since they
are so closely related to the total personality of the individual, his needs,
and his self-concept Thus, a person can generally change rather easily
his views toward a given make of cars, but it is often not so easy for
him to change his attitudes toward a given race or religion in which he is
more ego-involved, although this would vary from person to person de-
pending on the extent to which these attitudes are anchor pins in their
value system

Because attitudes are so basic to the individual's self-concept, direct
attack will generally only intensify them as the individual sets up his
defenses to ward off the attack and maintain self-consistency Remmers
[305], for instance, found that attitudes can be changed by direct in-
struction when not too well integrated but that direct instruction pro-
duces only negative reactions when attitudes are well organized (and
lead to strong negative emotions) If attempts to change attitudes are to
be successful, the approach must be both subtle and gradual so that the
individual at no time feels threatened He must be led to believe that
his position is basically correct and sound and that the new position is but
a minor readjustment of the original attitude It is also necessary that the
change be undertaken in a permissive and accepting atmosphere in which
he can admit his error without fear of losing status It follows that the
insecure person is less flexible in his attitudes and, as we shall see later in
the chapter, more likely to have prejudices and other negative attitudes
in need of change It also follows that any program designed to reduce
prejudices would do well to consider, first of all, the security of the in-
dividuals toward which it is directed

It must also be realized that a general approach is essentially inef-
fective in producing a change in attitude for, in an unconscious attempt
to safeguard his self-image against attack, the individual will perceive
only that which fits into his system of values Edwards [104] found
people select and remember from a speech those items that fit in with
their attitudes and reject those that do not [3] The unreliability of wit-

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[3] The factor of initial familiarity with the advantages of one's favored theories is
hard to control It was noted previously that pro-communists remembered more of the
pro-communistic arguments while the anticommunists retained more of the anticom-
munistic arguments of a passage-pointing out both the strengths and weaknesses of
communism

nesses who are personally involved also points, in many cases, to differential perception caused by differences in attitudes rather than to an attempt to lie in their own favor The individual, in keeping with the Snygg and Comb principle—that his main concern is the protection of his phenomenal field—simply, and unconsciously, finds evidence to support his views and ignores conflicting data A general factual approach would, of course, be more effective when the person has no information on the subject and no vested interest, in the form of attitudes previously formed, to be safeguarded through a reinterpretation of facts to fit his existing system of attitudes Dictators, for example, have been relatively more successful in cultivating the attitudes they wanted by using a relentless campaign directed at young children than they have been in campaigns directed at adults Nevertheless, even adults are relatively lacking in adequacy of experiences on the basis of which they form attitudes Very often they react to atypical incidents or fail to understand the confounding conditions that might explain these incidents Furthermore, they very frequently have no way of checking the validity of their "data," e g , they cannot know whether Negro blood differs in chemical composition from that of other racial groups

It must also be remembered that a change of attitudes, like any other learning, is predicated upon motivation To the extent that the individual's previous attitudes serve a need, he is not likely to want to discard them unless he is assured that the new attitudes will satisfy the need more effectively or that they will provide him with satisfaction of more dominant needs Furthermore, the individual must be given the opportunity to experience satisfaction in connection with his new attitude so that it will be reinforced Many students have developed a liking for a subject taught by a well-liked teacher and vice versa When adequate motivation is present, attitudes can be changed easily just note, for example, the rather drastic change in the adolescent's attitudes toward members of the opposite sex which result from intensification of the sex drive and the accompanying social pressures to join the crowd

Character Formation   ·

A considerable amount of the child's education is oriented toward the development of sound character dominated by positive moral attitudes and values and, thereby, toward the promotion of desirable conduct No aspect of education can be of greater importance from the stand-

point of the welfare of both the individual and society As we have seen in the discussion of attitudes as major determinants of behavior, conduct stems directly from one's system of attitudes and values, i e , from one's self-concept The person's need to maintain self-consistency will not permit him to act in violation of his dominant values and we can depend on the individual keeping in check impulses toward behavior inconsistent with these values Therefore, by directing his attitudes, we can direct his behavior and, conversely, any attempt to control his behavior by other means, e g , by force, unless accompanied by the development of appropriate attitudes is doomed to failure

To some extent, character is reflected in conduct which is in conformity with the values of the society in which one finds himself and it, therefore, relates to the degree of internalization of the controls and restraints of the social order Thus, the person who displays in his behavior such traits as honesty, integrity, morality, fairness, that is, whose behavior is in keeping with the values, mores, and standards of the social group is said to have character while the drunkard, the swindler, and the prostitute are said to be lacking in character On the other hand, conformity to the standards of society is not, in itself, the criterion of character The person who acts simply to get social approval (even if it means sacrificing his own values) rather than to abide by his own code of self-respect is a chameleon entirely devoid of character Likewise, character implies conformity in matters where non-conformity is possible but in which the individual decides upon behavior oriented to the welfare of others The drunkard who remains sober simply because he cannot obtain liquor is not displaying character, and the child who does not cheat solely because he is afraid of detection is nothing more than a coward

True character implies a rational choice based on an understanding of the issues involved in terms of their effect upon all concerned The child who does not know the issues involved can only be amoral Likewise, the individual who has a blind allegiance to an abstract concept, e g , honesty—and who tells his hostess that, frankly, he is bored—is displaying more rigidity than either character, morality, or integrity Character is displayed when decisions are based on a consideration of the welfare of all, in line with the concept of enlightened self-interest previously discussed Such decisions can produce sorrow (e g , when the teacher has to fail a student) but they cannot produce guilt feelings, thus the individual maintains his integrity and his self-esteem

Inasmuch as [a] attitudes develop as by-products of the experiences which the individual undergoes, and [b] the nature of the attitudes that

develop is directly related to the degree of satisfaction of the individual's needs which these experiences bring, it follows logically that the secret of successful character formation lies in making suitable behavior more satisfying than undesirable behavior Thus, the child must be made to realize that "honesty is the best policy," that "crime does not pay," that greater satisfaction is obtained by being considerate than by being inconsiderate, by being fair than by taking advantage of a situation, by striving for the welfare of others than by being selfish Character develops out of the inner satisfaction of behaving according to one's own code Unfortunately, the various social forces playing upon the child are not only conflicting with each other in many cases but many of them are individually inconsistent Thus, both desirable and undesirable behavior are at times punished and rewarded as the child is intermittently (if not indiscriminately) ignored and praised for his honesty while the cheater is both punished and allowed to profit from his cheating Psychological research is conclusive as to the fact that such an inconsistent system of reinforcement is ineffective in promoting any form of learning The result is confusion and ambivalent attitudes, the net vector strength of which as it leads to behavior is generally weak and easily overcome by conflicting motives which are operative in the situation Thus, the student who is more sold on the prestige value of an outstanding academic record than he is on the virtue of honesty on examinations, whose self-image relegates integrity to a lower value-plane than scholarship, will find it easy to cheat when the need and the opportunity arise

The fact that attitudes are related to the satisfaction of one's needs introduces the question of the relative role of heredity and environment in the development of character Every individual has needs which he must satisfy but the ease or difficulty with which these needs are satisfied varies from person to person depending on his assets (many of which have an inherited basis) and on environmental conditions Character is the resultant of two sets of forces in dynamic interaction forces within the individual and forces of the social environment in which he operates For this reason, it may be easier for the bright child to refuse to 'stoop to cheating" than for the duller child who must choose between cheating and failing This dilemma does not imply the inheritance of character certainly many individuals have developed stronger characters as a result of their limitations On the other hand, others have succumbed Perhaps inherited strengths and weaknesses may be considered to be predispositions to the development of certain character traits Limitations may, for example, predispose a person toward insecurity and thence to excessive need to conform

The relationship of the individual's glandular balance to his temperament, discussed in a previous chapter, has been interpreted as potential evidence of the inheritance of temperament Thus, the administration of male and female hormones leads to changes in social aggressiveness and dominance which may, in turn, be related to character However, since character is a matter rather of the direction in which this aggression is oriented rather than of its mere existence, it should be as readily possible for an aggressive person to display integrity, honesty, and other values as it is for a more submissive individual In this orientation of aggressiveness and other personal traits, culture and environment play a major role, perhaps even to the point of effecting drastic changes in basic character traits Mead [257], found that in certain primitive tribes treachery and suspiciousness form the basis of the typical pattern of interpersonal relationships while, in other tribes, the emphasis is upon cooperation A similar interpretation in terms of learning can be given the relatively large differences in character and conduct which can be noted among the various socioeconomic and cultural groups to be found even in our country

The home is the greatest single factor in character formation and when the home subscribes to sound standards of honesty and morality the child can be expected to accept them The school is also in an excellent position from the standpoint of character formation not only is the child still in the formative years when he comes to school but the years of his attendance are characterized by an increased capacity for understanding the reasons underlying desirable behavior

Character formation programs must be founded upon knowledge and understanding of the social code and the moral values with which one is expected to conform as well as the reasons underlying their desirability However, knowledge is not enough one must be motivated to do what is right Psychology, being interested in knowledge only inasmuch as it is translated into proper behavior has always viewed knowledge as a necessary but not a sufficient condition for positive conduct For this reason, character education must not be content to present value concepts as intellectual abstractions entirely isolated from concrete aspects of the child's life On the other hand, it must not be aimed at the habit level only and, although practice in specific instances of proper conduct are essential, these instances must be generalized into ideals and moral principles Otherwise, fair play to the child becomes simply a matter of not cheating in a game, truthfulness applies only to admitting having cut down cherry trees, courage applies only to saving people from drowning, and stealing to taking other children's pencils Even for many adults, stealing is not

generalized to cover loafing on the job, falsifying income tax returns, and pocketing excess change, for instance

Character education cannot be compartmentalized into a 15-minute concentrated period devoted to the teaching of values To be effective, it must be integrated into every aspect of instruction and classroom living in the words of the report on moral and spiritual values in the public schools published by the Educational Policies Commission [103] "Lessons in character education cannot be clamped on like a gadget to some corner of the educational program" On the contrary, it must permeate the entire educational process—and certainly the social sciences, literature, and even mathematics and the sciences are not lacking in examples with definite moral and spiritual implications, if teachers will only exchange their metaphors and similes for study of the dynamics of the Brutuses, Cassiuses, and Macbeths, their 1492's for a study of the strength of character of the Columbuses, the Nelsons, and the Edith Cavells Sports are likewise replete with opportunities for teaching values of fair play, comradeship, and respect for individual excellence An obvious corollary of the above statement is that, at no time, must the other objectives of the school undermine the character education program Actually, there is nothing in the curriculum of the school that can—short of distortion—conflict with the development of character, although, as stated in the report of the Educational Policies Commission, if there should be a conflict, "there must be no question whatever as to the willingness of the school to subordinate all other considerations to those which concern moral and spiritual standards

Probably even more directly involved in the development of character on the part of the child is the general atmosphere of the school A strongly autocratic atmosphere breeds blind conformity or deceit, jealousy, and resentment Likewise, unrealistic demands made upon the child put him under such stress that failure to incorporate proper values or violation of some of these values are likely to occur The making of certain demands upon the child is necessary for character formation but excessive demands may well result in a violation of his values and subsequent rationalization as to their unimportance Many students have accepted cheating as a way of getting grades which they are not capable or willing to get otherwise Perhaps an emphasis on learning—where it should be—rather than on passing tests will result in a better attitude and better conduct in matters of personal integrity, for the sacrificing of some value in a given context soon leads to its abandonment in other areas and to easier rejection of other values as well Thus, the crook is

rarely a person whose antisocial behavior is restricted to the area of stealing Once the individual has formed a self-image of being an "undesirable character," he can expect only undesirable behavior from himself, as is obvious in the case of the drunk, the crook, the bum, or the prostitute For that reason, character education should emphasize rewards for desirable conduct rather than punishment for undesirable behavior and, as far back as 1909, Dewey [95] in his booklet *Moral Principles in Education* deplored the fact that too often the teacher s concern with the moral life of the pupil takes the form of alertness for failures to conform to school rules and routine

A flexible classroom organization where children are given practice under the direction of the teacher in making decisions involving the welfare of the group is an essential aspect of character education One can no more learn moral behavior (in the sense of its becoming functional in his life) in a rigid teacher-dominated classroom than one can learn to swim in the locker-room If the school is to be successful in building character, it must provide the child with situations in which he can display character Thus, the discipline of the school can be a most important aspect of character education, but for it to be effective in this regard, discipline must be a matter of *self-discipline* in which the child through practice in accepting the consequences of his actions gradually comes to realize that only through intelligent conformity to acceptable group standards can he derive maximum satisfaction for his needs Furthermore, discipline must not only be consistent but it must be oriented toward promoting an understanding of what makes desirable behavior desirable Only then can it serve as the foundation for the development of inner standards of conduct and only then can the child grow in ability to "govern himself" in the absence of specific external regulations

The previous paragraph makes it obvious that moral character cannot be developed apart from the social situation and that a classroom group with sound orientation and a high level of cohesiveness is the teacher's greatest ally in character education What this implies is that character education in the school must be oriented toward the group rather than toward separate individuals and attempts to improve the character and conduct of a given person, for instance, have to take into consideration the reinforcing or undermining influence of the group of which he is a member It also follows that a character education program cannot succeed in an atmosphere that violates the very values it is attempting to teach Children cannot learn fairness when teachers are themselves unfair, they cannot learn consideration for others when

teachers a.e dogmatic and arbitrary, they do not learn integrity when teachers alibi or project their lapses upon their students Teachers cannot pass along to their students the honesty, the fair-mindedness, the integrity which they do not themselves possess

Prejudice

Prejudices are examples of negative attitudes and as such can be understood only in terms of the concepts in the previous discussion They are discussed separately in this chapter because of their prevalence and because of their importance from the standpoint of the harm they do to both persecutor and persecuted The latter suffer from feelings of humiliation and inferiority which are reflected in increased hostility and aggression which, in turn, serve to intensify the prejudices others hold against them The persecutor, on the other hand, denies himself (and society) the benefits of the contribution by the persecuted but by deriving some satisfaction for his needs through such (negative but nevertheless partially effective) means, he is saved from having to do something more constructive A great deal of work has been done in this area by such groups as the National Council of Christians and Jews as well as by college departments of Human Relations throughout the country Yet relatively little of this seems to filter down into the home and the public school where it might be expected to do the most good

Prejudice is essentially an outgrowth of insecurity [1] Research supports the viewpoint that the intolerant person is the immature and insecure individual who needs so desperately the support of the in-group to which he belongs that he has to reject nonmembers The insecure person *needs* prejudices and the individual who has cause for being prejudiced will tend to be prejudiced against a large number of groups —and even nonexistent groups [167] he is simply an intolerant person who needs to compensate for feelings of insecurity and inferiority Faced with this need, he first develops prejudices and then develops reasons to justify them Thus, prejudice is closely tied to the personality of the individual and research [124] has found prejudiced individuals to be less detached, to admire strength and power, to reject weakness, to resent authority, to be more suspicious and insecure, and to display excessive

[1] Some prejudices, particularly in young children, probably reflect nothing more than a tendency to imitate their elders

concern over their own status Such persons remain prejudiced because their insecurity makes it impossible for them to change Adolescent clannishness reflects the same insecurity

As we have seen in Chapter 6, the infant is egocentric and, although he later expands his self-concept to include his immediate family and a few friends, only reluctantly and in a limited degree does he attain positive attitudes of enlightened self-interest that will make prejudices impossible One might go so far as to claim that prejudices may have a basis in the struggle individuals have to wage in order to satisfy their needs Whatever the validity of this claim, it seems reasonably evident that tolerance is not an inborn trait and that, if it is to be developed, teachers and other adults have to work at it by precept and example

The school needs to be careful that it doesn't unwittingly foster prejudices It seems logical to suspect that an overemphasis on competition will tend to create distrust and suspicion of others Likewise, offhand remarks by the teacher of social studies as to the motives of people may form the basis for cynicism and distrust A very fertile source of prejudice is to be found in the concept of group spirit As we have seen in Chapter 5, the teaching of patriotism, although highly desirable, may degenerate into provincialism and clannishness which is nothing more than prejudice on an organized basis Allport [4] voices the opinion that the patriotism taught in our schools is often narrowly conceived, that the fact that loyalty to the nation automatically implies loyalty to all the subgroups within the nation is seldom pointed out, and that the teaching of exclusive loyalty—whether to nation, school, fraternity, or family— is the equivalent of instilling prejudice He refers to the "institutional patriot" and the "superpatriotic nationalist" as "thorough-going bigots"

The removal of prejudices follows the same principles as those discussed in the previous section It may be that association under pleasant conditions between the parties involved will lead to a greater understanding and tolerance it may, on the other hand, lead to an intensification of prejudice if the association proves to be unpleasant It does not necessarily follow that prejudice against a given national group will disappear as the result of a study of its language and customs an understanding of the principle of conditioning and the law of effect suggests that such courses, if taught by an autocratic teacher, may engender or intensify prejudice rather than eliminate it At a more complex level, such techniques as role-taking, particularly where the prejudiced person is given the role of the victim, have been relatively more effective [271] The persecuted must also be made to realize that his own reactions can

be an important contributor to the development and continued existence
of prejudice

Propaganda

Of immediate relevance in the formation of attitudes is the role of
propaganda which indeed may be defined as a deliberate attempt to
influence attitudes and, thereby, to orient behavior with respect to a given
object, condition, or state Its effectiveness is, of course, roughly propor-
tional to the extent that it makes valid applications of the principles of
psychology It is relatively common to have politicians and sales managers
avail themselves of the services of a psychologist in order to sell the public
on their line of action or of products For the same reason, students in busi-
ness administration are generally encouraged to take courses in psy-
chology

Propaganda is particularly common in the area of merchandising
where, by means of advertisements, large and small, producers and re-
tailers of goods attempt to create favorable attitudes on the part of
potential buyers toward a given brand of car or vitamin pills Gen-
erally, advertisements rely on presenting the object toward which fa-
vorable attitudes are to be developed simultaneously with or within the
framework of some other object or concept toward which people are al-
ready favorably inclined Thus, a certain brand of liquor will be shown
under the Christmas tree with the whole family unwrapping their gifts,
or a picture of Mother will be shown with "Give her a —— for Mother's
Day'l In most cases, the connection between the two objects is far from
being crucial but, as they say in business, "It pays to advertise!" Of
course, it must also be remembered that presenting the potential buyer
with a name with which he can label an article makes him more prone,
other things being equal, to buy that particular article a person is more
likely to buy a particular brand of cigarette (even though he knows
them only by name) than to ask simply for cigarettes' In the same way,
candidates for office make sure that their pictures and names are familiar
to the voters, and they often spend considerably more money in keep-
ing the voter aware of the fact that they are running for office than in
telling him what they will do for him if elected

That propaganda is a powerful tool in the hands of the politician is
well known in fact, campaigning for office often seems to involve more

propagandizing with respect to minor or irrelevant issues than it does informing the voters on basic issues and letting them decide The use of propaganda for political advantage is not new techniques like the repetition of a central theme in the form of a slogan that can be mouthed by the uninformed, the slipping of a controversial idea among ideas toward which listeners are favorably inclined, the use of facts out of context, as well as such devices as name-calling, appeals to "get on the band wagon," and politicians styling themselves as "just plain folks" have been used by propagandists from prehistoric times, no doubt [5]

Actually, propaganda is not necessarily evil one cannot judge the quality of the idea being advocated on the basis of the propaganda used in selling the idea Propaganda has been used, for instance, in influencing voters on the issue of floating a bond issue to finance a school building program just as it has been used to incite mobs to criminal actions and even nations to acts of war Furthermore, research [68] has shown that ability to detect the use of propaganda does not make the person immune to its effects after one has recognized that propaganda is being used, he still has the problem of deciding the validity of the issue involved In fact, there is no sure way of immunizing individuals to the effects of propaganda The best defense against harmful propaganda is to supply the individual with a good background of integrated knowledge [285] and a certain level of security which will enable him to weigh evidence objectively

, It should be noted that propaganda may, at times, involve a definite departure from basic facts but when the persons toward whom it is directed are informed, such falsification would tend to repel rather than attract Generally, propaganda relies on facts but rearranges them to give an impression often contrary to truth, at times, however, the facts are synthesized to make clearer their true meaning An interesting aspect of this problem is that known as the "big lie" which involves an untruth of some magnitude which is repeated over and over until it becomes accepted as truth

Propaganda can be particularly effective when used on young children whose minds are relatively pliable and whose background of information on the basis of which they can reject falsehoods is relatively limited This has a direct bearing on the work of the classroom, especially

* [5] Much of this discussion relates closely to that of leadership and emotions Thus, propaganda is often a matter of using words, not to convey meaning but rather to generate emotions which will distort meaning, using catch phrases that, very often, have no bearing on the issue involved A pessimist might suggest that propaganda is related directly to the position taken by Horn (Ch 12) that people will not think if they can at all avoid it—and, as judged by the clarity of their thinking, some people seem successful in such avoidance

when the prestige of the teacher is an added convincer in selling his views to the child In Nazi Germany, for instance, young children learned to read to captions such as "Mein Fuhrer," "Mein Fuhrer ist gut," written under pictures of Hitler in full military dress (an emotionally toned concept) There are people in our country who feel we need to sell democracy with some of the fervor and zeal the Nazis and the communists use in spreading their ideologies, that we should cultivate in youngsters an intelligent understanding of the meaning of democracy and an emotional attachment to its principles, practices, and methods It is their contention that, instead of debunking our heroes, we could—and should—condition the attitudes of our children toward democracy and toward moral values such as integrity by subtly introducing short passages about Washington, Jefferson, our presidents—much after the style of the old McGuffey readers Of course, others would object to this procedure on the ground that it is not "democratic' and that one cannot teach democracy by undemocratic methods that the school in a democracy should address itself to teaching children *how* to think and not *what* to think

The line between *education* and *indoctrination* is often very thin and much education could more appropriately be labeled propaganda Thus, a unit in social studies on the relative merits of public ownership of water and transportation systems would tend to incorporate an element of propaganda In theory, education and propaganda differ in that the latter is aimed at indoctrinating the learner to a certain point of view whereas education is aimed at providing him with the background and the method for arriving at his own course of action Technically, it is possible to consider as education the unbiased presentation of two sides of even a controversial issue, in practice, it is next to impossible to do so, especially since students are likely to see and hear only those arguments which support attitudes they already hold

A fundamental question here is "Should the teacher avoid taking sides in basic issues simply to avoid the possibility of "indoctrinating" young and impressionable minds?' The writer thinks not[1] Society in America has the right to expect its teachers to have and to expound the dominant values upon which this nation stands To argue that one does not have the right to "propagandize" in favor of democracy because not all people believe in democracy is akin to saying that teachers should not encourage sexual morality simply because some people take a more liberal view on the subject than others It is hardly a matter of choice children will form attitudes anyway and teachers cannot avoid taking sides—either by willingness to stand and be counted or by default This

does not mean that the teacher should go out of his way to impose his views on children with respect to every controversial subject but there are dominant values on which teachers must take a stand A similar opinion is expressed by Bernard [31] who feels that the teacher owes it to his pupils to let them know where he stands on most issues, and that not only are attitudes part and parcel of the educative process but they will be formed through evasion if not by planned discussion Horn [184], in discussing the teaching of social studies, rejects the claim that schools in a democracy should teach children how to think and not what to think on the thesis that it is impossible to teach the *how* apart from the *what* The student is referred to his convincing argument

HIGHLIGHTS OF THE CHAPTER

Many psychologists and educators have become convinced that there is no more important aspect of the work of the school than the development by the child of positive attitudes that will direct his behavior along constructive lines The organization of this text around the dynamics of human behavior, needs, the self-concept, the phenomenal field motivation emphasizes the same viewpoint The prospective teacher needs to be acquainted with these concepts as well as with the following highlights of the present chapter

[a] Attitudes relate directly to the satisfaction of needs, the self-concept, the phenomenal field, the emotions and motives Their importance as determinants of behavior becomes clear in this setting

[b] The development of attitudes can probably be explained most simply in terms of the conditioning process

[c] Attitudes develop in connection with the satisfaction of needs They are, therefore, related to such factors as sex, age educational background, socioeconomic status

[d] Children will develop attitudes—positive or negative—as by-products of the experiences which they undergo The school, therefore, cannot leave this important aspect of the child's education to chance, but rather must make definite provision for the development of positive attitudes

[e] Teachers need to be solid citizens who can inspire children and with whom children can identify in the formation of sound attitudes and values .

[f] If attitudes are to lead to constructive behavior, they must be developed through meaningful participation in worthwhile activities

[g] The school has no greater task than the promotion of sound character and conduct on the part of students, and character education should permeate the whole educative process

[h] The school in the past has not been too successful in promoting favorable attitudes toward itself, its teachers, its curriculum, and in some cases the values of integrity and stability for which it exists A little care in making the curriculum more suitable, the demands on the child more realistic, and the classroom atmosphere more pleasant should result in considerable improvement in the situation

[i] Attitudes, once formed, are relatively difficult to change Not only do they constitute an integral part of the total personality but, since they serve a need, the individual often lacks the motivation to change

[j] Prejudice is an example of negative attitudes

[k] The line between education, on one hand, and propaganda and indoctrination, on the other is often very thin Despite arguments to the contrary, it would seem logical that, since the school is charged with the responsibility of molding the child to the dominant values of society, "indoctrination —within the framework of democratic processes—of the child in these major values is not as much a right as it is a duty

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QUESTIONS AND PROJECTS

1 To what extent can knowledge of right and wrong be expected to result in correct behavior?

2 Evaluate "social lies" from the standpoint of enlightened self-interest

3 Evaluate T V programs, comics, movies, as to their influence upon the development of attitudes and values If these are harmful, what would you suggest we substitute and how can we effect the substitution?

4 What is the basis of socioeconomic differences in attitudes toward the school? toward education? toward certain moral values?

5 How would you go about teaching some of the more feminine poetry to grade-ten boys so as to create positive attitudes toward the subject?

14

Measuring Academic Achievement

⚜

*In a very real sense, the test maker determines the curriculum
of the school*

SMITH *

THE MEASUREMENT of the academic achievement of pupils and the as-
signment of marks on the basis of performance is viewed by many teachers
with rather mixed feelings ranging all the way from an apologetic "I
don't believe in tests" to a cocksure conviction that tests are practically
infallible Since measuring academic achievement is an integral part of
the over-all teaching-learning process, it is necessary for teachers to
develop in this area the same degree of competence as they generally
display in other aspects of teaching Specifically, this implies greater
competence in defining the goals of education and of particular courses
in terms of the nature and needs of the student and greater competence
in the techniques of appraisal of progress toward these goals Thus, a
testing program should involve both the measurement of academic status
and the evaluation of such status by relating progress to educational goals

* Smith, H P *Psychology in Teaching* Englewood Cliffs Prentice-Hall, 1954

Aspects of a Pupil-Appraisal Program

Since the school is responsible for the all-round growth of the child, its pupil-appraisal program must cover more than the mere testing of academic skills as was typical of many schools in the past To be of maximum benefit, the program must concern itself with appraisal of the following areas

Intelligence The measurement of intelligence has been discussed in Chapter 7 and there is not much that can be added here except to point out that the child's IQ cannot be interpreted apart from the other aspects of his total personality

Special aptitudes Aptitudes are of particular importance in the area of vocational guidance in high school but they also have a bearing on the particular strengths and weaknesses which the student displays in different subjects particularly at the high school and college level

Interests Vocational interests are of fundamental importance in the area of vocational guidance Also of major concern to the school are nonvocational interests (e g , hobbies, cultural and recreational activities) which provide a contact through which the teacher can tap the student's motivation

Personal and social adjustment The promotion of adjustment on the part of the child is in itself one of the school's major objectives In addition, adjustment has a direct bearing on his academic achievement and his behavior in the classroom

Academic achievement Even though the school has accepted responsibility for the all-round growth of the child, when it comes to measurement of this growth, the teacher inevitably finds himself more directly involved in measurement of the academic than of any other aspect of his development

The areas of special aptitudes and vocational interests are of particular concern in high school This does not mean that the grade school should ignore aptitudes and interests but, generally, the teacher who has children for some six hours a day for a whole year knows quite a lot about the particular strengths, weaknesses, and interests of his pupils by using simple observation, perhaps together with such informal techniques as themes, interviews, and off-hand conversations In the same way, the grade school teacher should be able to learn something of the personal and social adjustment of his pupils simply by being alert In the departmentalized high school, on the other hand, where perhaps no teacher gets

to know a given student, there is a correspondingly greater need to rely on tests, inventories, sociometric techniques, and other formal and semi-formal instruments These three aspects—special aptitudes, interest, and personality adjustment— are of utmost importance to the teacher interested in the all-round growth of the individual Nevertheless, since they are too involved to be covered adequately in a course in educational psychology, the student seeking more information relative to these areas is referred to any one of the many excellent texts in educational tests and measurements available in any college library

Measurement in the Classroom

Teachers have always measured the extent to which pupils master the content of their teachings It was not, however, till the turn of the century that testing the effectiveness of the classroom in promoting learning came to resemble anything like a science Some of the pioneers in the improvement of academic testing include Horace Mann who pointed out the superiority of the written over the oral examination, Thorndike, who championed the early cause of measurements, Kelley who published the first comprehensive book on the principles of educational measurements [206], Hawkes, Lindquist, and Mann [171], whose book spelled out the principles of classroom test construction, and many other educators and psychologists too numerous to mention individually

Despite rapid progress during the past half-century, much yet remains to be done particularly in the area of interpretation and utilization of the results of testing in promoting the all-round growth of the child The following are among the recent trends in this area [a] a greater tendency to interpret academic achievement in relation to other phases of development, [b] a greater emphasis on growth and continuity as opposed to a reliance on the child's status with respect to a norm group, [c] a greater emphasis on the measurement of the more complex types of learning and of the higher mental processes and [d] a greater emphasis on testing as an aspect of the problem of promoting and guiding child growth Implied in these recent developments is a need for a multiple approach to pupil appraisal, for greater validity and greater comparability from year to year in the instruments used, and for a recording system which not only incorporates this information but also synthesizes it, thereby enabling the teacher to see it in perspective

FUNCTIONS OF AN ACADEMIC-TESTING PROGRAM

In every activity or enterprise, whether in the area of business, industry, or education, there is need for periodic evaluation of the success of one's efforts and of the adequacy of one's present status from the standpoint of future tasks Even primitive tribes, for example, have initiation rites for admission to adulthood It is perhaps because schools have somewhat of a monopoly, because they do not have to demonstrate success or account for their failures, that their efforts at evaluation have until recently been so feeble and generally so ineffective It is even doubtful that the function of the school testing program in terms of providing pupil teacher, and administrator with information as a basis for guiding the growth of the child is fully appreciated by those responsible for its operation

BENEFITS TO THE PUPIL

Probably the most important function of academic tests from the standpoint of the pupil lies in the area of pointing out the degree of his mastery of various aspects of the material covered and of serving, therefore, as the basis for evaluating his progress toward certain goals and for reorienting his learning toward progressively more advanced goals In this light, tests are essential to the work of the classroom, for only to the extent that the child is given the basis for evaluating his performance in terms of his objectives can he assume responsibility for his own learning and his own growth and only then can the teacher guide his growth effectively

Tests also promote sound learning Not only do they serve as motivational devices because they provide short-term goals for which to strive, but they are in themselves effective learning experiences—the child learns while preparing for the test he learns when taking the test, and he learns while reviewing after the test has been taken Tests also constitute a highly motivated way of individualizing instruction Thus, tests should be given frequently and they should be kept short so that they can be graded and reviewed in the same period, in order to provide for immediate reinforcement

BENEFITS TO THE TEACHER

For the classroom teacher, academic tests, along with such other instruments as tests of intelligence, serve their main function by [a] helping him determine the educational needs of the child, [b] making it possible for him to help the child in setting realistic goals and orient-

ing classroom experiences to the level of his present status so that these experiences will be meaningful and conducive to his maximum growth, and [c] permitting the measurement of his progress toward these goals They serve as a partial basis for determining the optimal grade placement of the child and are of primary importance in providing guidance or diagnostic and remedial work for children who are experiencing difficulty Tests can also help the teacher in appraising the effectiveness of his teaching, and they can be as instrumental in promoting teacher growth as they are in promoting pupil growth The teacher can also use tests to advantage in individualizing the work of the classroom and in maintaining a healthy degree of motivation on the part of students

BENEFITS TO THE ADMINISTRATOR

For the administrator, tests serve many—perhaps secondary but nevertheless essential—purposes First, they are useful in orientation of the curriculum and in improvement of instruction because they provide a criterion on the basis of which the effectiveness of both curriculum and instruction can be appraised [1] Tests also supply evidence of status and of progress of pupils, individually and collectively, help in the maintenance of standards, and serve as the basis for reports to parents, to school officials, and to the community They constitute a base for the certificates given as evidence of successful performance in the classroom to students seeking employment or transferring from school to school

ROLE OF TESTING IN THE LEARNING PROCESS

Academic testing is not a matter of the occasional day-of-reckoning type of situation imposed as a superstructure upon—but relatively apart from—the teaching-learning process On the contrary, it is an integral part of this process and its full value is realized only when it is integrated with the total process of education Rather than being an end in itself or a means leading only to a report card, testing is a means leading to the setting of more appropriate goals, to the planning of more effective attempts to reach these goals, and to further reappraisal Thus, testing and evaluation are not the last steps but rather both the first and last steps in the instructional program—or more correctly since planning, doing, and evaluating represent a continuous process, one of the steps of the spiral by means of which the child's growth is furthered What is needed for effective learning is continuous, rather than periodic, appraisal

[1] Tests are also used (illegitimately) in judging the quality of teachers through the performance of their students This is an extremely dangerous procedure since it tends to force teachers to concentrate on those aspects of pupil growth which are covered in the test

Pupils should be directly involved—under the teacher's guidance—in the planning and evaluation of their educational experiences and in the setting of new goals in the light of that evaluation As we shall see later in the chapter, some teachers have gone so far as to let students determine their own grades and report to their parents on the progress they have made Not only do these procedures involve the student in his own education but they also lead to self-knowledge as well as to the setting of goals that are realistic and meaningful in terms of his needs and purposes Such a cooperative approach tends to lead to greater growth on the part of pupils and, equally important, it can be as profitable from the standpoint of improved teacher efficiency

The testing program is not, however, without its dangers of abuse or misuse If improperly stressed by administrators, tests can get to dominate the teaching process to the point where teachers simply become monitors for tests and feel compelled to ignore all aspects of pupil growth not specifically covered therein[2] This is often the situation when the end-of-the-year standardized-testing program is allowed to become the sole criterion of pupil growth Similarly, if misused by teachers, tests can mean to children, not an opportunity to learn or to measure what they have learned, but simply a chance to fail and, certainly, little can be said in favor of the Battle of the Grades waged periodically in some of our schools in which by means, fair and foul, teachers and pupils attempt to outwit each other Tests are generally harmful to the student when [a] they become objectives in their own right causing him to become so engrossed in getting a grade that learning becomes an insignificant aspect of getting an education, [b] when they are given for the purpose of separating the sheep from the goats, of labeling children as adequate and inadequate, [c] when the results are interpreted as final and infallible indications of all we need to know about the child, [d] when they have harmful effects with respect to other aspects of the child's growth which we are trying to promote, e g , his personal and social adjustment, and [e] when they become the only means of communication between school and home regarding the student's progress Sad to say, much of the testing done in our schools today can be criticized on any one of these five counts However, these criticisms stem from the misuse or abuse of tests and do not imply that tests are bad per se and should be eliminated from our schools Thus, working for a grade is not incompatible with getting an education and it does not hold that whenever grades are given, ex-

[2] As Brownell (3) points out, when teachers are rated on the basis of the marks their students make on examinations, the prudent teacher will see that by hook or crook his pupils pass the examinations regardless of how other considerations have to be neglected

aminations will have to be proctored and students will seek out the easiest instructor In the same way, the existence of a testing program in the school does not mean that it will lead to a distortion of the relative emphasis on the various objectives of the school, nor does it mean that every student has to be evaluated in terms of the same standard with a complete disregard for the need to individualize instruction Measurement and evaluation are essential in the classroom When seen in relation to the teaching-learning process as applied to the child's total growth, they cannot have a detrimental effect upon him for they then become an integral part of the process by which his growth can be promoted most effectively

Characteristics of a Good Measuring Instrument

Whenever one undertakes to measure anything, whether in the area of distance, weight, or achievement, he needs to make sure that the measuring instruments possess such characteristics as will make for dependability in the results The characteristics, previously mentioned in connection with intelligence tests, apply with equal force to tests designed to measure academic achievement, whether these are formal or informal, standardized or teacher-made

VALIDITY

First and foremost, a test must be valid, i e , it must measure what it claims to measure ' Thus, a test in American history for grade eight designed for a given class must deal with the phase of American history taught in that particular class It probably would not be valid even for another class on the same phase in American history where perhaps a different emphasis had been given to the various aspects of the subject Validity is a specific concept a test is valid for a specific purpose under specific circumstances But even within the course in American history as taught in a given classroom, there are many different aspects that can be measured A teacher may, for instance, emphasize dates and names, or he can emphasize relationship and understanding, or relative amounts of both

Many questions can be asked 'Should the teacher make deductions for misspelled words on the examination?", 'for bad grammar? , 'for

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* What is measured is performance from which the degree of learning which has taken place is inferred

sloppiness and general illegibility?", "Should the grade reflect the student's attitude toward the course and toward the school in general?" and many others

These questions can be answered only in terms of the course objectives, and the determination of these objectives is necessarily the first step in constructing a test and in evaluating it from the standpoint of validity Furthermore, in keeping with the definition of learning, these objectives should be stated in terms of specific changes in student behavior which the course is also designed to promote Although we have to think in terms of the whole child, it is not enough to refer to his all-round growth when it comes to measurement the changes to be brought about must be stated in specific and measurable terms

Generally, these objectives can be broken down into three main areas functional information, skills, and attitudes, and these should, in turn, be broken down into more basic components Thus, under functional information, may be listed facts, dates, names, technical terms, definitions, principles, and generalizations Likewise, skills might be broken down into ability to look up a reference, ability to present a report in clear, concise English, and attitudes might be subdivided into appreciation of the contributions of political and scientific leaders, pride in one's social heritage, loyalty to certain ideals A formulation of the objectives of a course in educational psychology has been given on page 11 It will be noted that each is supposedly stated in terms of certain behavior changes expected as a result of the course

Not all of these are capable of measurement and generally the table of objectives is reduced to a table of specifications which contains only those objectives that can be measured together with the emphasis to be placed on each in the test Thus, objectives serve as guides to instructions while specifications are guides to evaluation—and certain objectives, even though pertinent to instruction, would not be listed in the table of specifications of the test [4] Whatever objectives are carried over to the table of specifications should be so stated that the teacher can determine whether or not the child has attained the objective, as for example "Does he or does he not know certain facts?" "Is he or is he not able to deal with the technical vocabulary of the course?" "Is he or is he not able to use a reference?" This needs to be done very carefully for, in a very real sense, the test the teacher gives determines the amount and kind of learning the child does, and objectives that are not stressed on the test will tend to be overlooked by the student—and by the teacher, too—

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[4] There is generally no point in listing high sounding objectives that are never measured or never attained

for as pointed out by Kirkendall [216], "The avidity with which pupils work for marks is equalled only by the assiduity with which teachers teach for marks"

Now to get back to what should be included in a test If the test is to be valid, it must cover not just one area of the table of specifications, but all of them in proportion to their importance and to the emphasis which has been placed on them Thus, a test that measures only facts is not valid unless the course is designed to cover only facts In the same way, whether or not to deduct marks for misspelled words would depend on whether this is one of the objectives of the course One might well expect the objectives in a course in American history to include ability to spell the names of the people who made American history and, if it is, then the teacher should expect students to demonstrate their ability to spell such names The misspelling of common words in a history test might, on the other hand, be a different matter and an instructor might not want to deduct for such misspelling if he felt spelling °of ordinary words is only vaguely and remotely one of the objectives of his course [5] The question of what to test is, therefore, answered in terms of what one is attempting to accomplish through his teaching

Unless all teachers, working as a team, emphasize good spelling and correct English in their classes, students are likely to get the idea that English is something which is used in the English period but which has no relation to any other course, let alone to out-of-school situations From the standpoint of validity, however, it must be noted that if a student gets an *A* with regard to the content of, say American history, but that grade is reduced to a *B* or a *C* because of difficulties in the area of English, penmanship, or even deportment, the grade he gets is not a valid indication of his knowledge of American history it does not reflect what it purports to reflect, namely, achievement in American history Furthermore, inasmuch as another student may also get a *C* out of limited knowledge of American history but effective use of the English language, the two grades would not mean the same thing and, hence, the students would not have anything to go on as far as improving their performance is concerned [6]

Most tests of academic achievement overemphasize facts simply because they are easy to measure Correspondingly, they underemphasize

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[5] Whether counted or not, they should be brought to the student's attention

[6] Teachers need to work as a team toward maximum pupil growth rather than toward the attainment of individual glory The situation in grade school where one teacher is responsible for the whole child is generally satisfactory In high school, there is need for a greater degree of synthesis, perhaps through the homeroom, of the over-all progress of the child

the more complicated but usually more significant aspects of education such as problem-solving, understanding of relationships, interpretation of data, application of principles, drawing of inferences, testing of hypotheses, and the other higher mental functions [7] These are measured in various degrees by some of the better tests available commercially. Teachers would do well to become familiar with what can be done to measure growth toward these important goals of education by a survey of such tests as the Watson-Glaser and the Wrightstone tests of critical thinking [406, 428]

The modern emphasis on all-round growth of the child has greatly complicated the task of evaluation by increasing its scope to include certain phases which are relatively difficult to define in terms of measurable objectives, let alone measure and relate to the child, his capacity, his maturity and the other aspects of his background In fact, if we are concerned with the whole child, our evaluation should probably include out-of-school behavior for, when education consists of experiences meaningful in terms of the child's purposes, the distinction between in-school and out-of-school becomes trivial

In order for a test to be valid, we must also assume, for instance, that reading poses no special problem in tests where reading is not what is being measured, that the child has the right attitude and is properly motivated toward the test, and that he is relatively free from emotional blocking that might impair his performance The first point relative to reading difficulty may, for example, be of considerable importance particularly in essay examinations where the misreading of a question or two may cause the student to get a score much lower than he really deserves

RELIABILITY

In addition to being valid, an academic-achievement test must also be reliable, i e , it must measure consistently whatever it measures It must be noted that a reliable test is not necessarily a valid one since it may measure consistently something other than that which it purports to measure On the other hand, if a test were to be totally unreliable, it could not be valid

The reliability of a test can be determined by checking for consistency the performance of students on successive administrations of a given test [8] This consistency is generally measured in terms of the coefficient

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[7] The objectives of the Fight-Year study included [a] information, [b] technical vocabulary, [c] drawing inferences, [d] testing hypotheses, [e] applying principles, [f] accuracy of observation, [g] use of tools, and [h] ability to express ideas

[8] Reliability is generally measured in one of the following ways (a) equivalent forms, (b) test-retest, and (c) chance halves The student is referred to the card catalog of the library for appropriate sources for information on these techniques

of correlation, most good tests having reliability coefficients in the neigh-borhood of 90 This correlation can be converted into what is known as the standard error of measurement which refers to the magnitude of the fluctuations in the individual's scores which might be expected upon

TEST 1 *Inference*

DIRECTIONS An *inference* is a conclusion which a person draws from certain observed or supposed facts Thus, from the electric light visible behind the window shades and from the sound of piano music in a house, a person might *infer* that someone is at home But this inference may or may not be correct Possibly the people in the house went out leaving the lights on, and the piano music could be coming from a radio or phonograph they left playing

In this test each exercise begins with a *state nent of facts* which you are to regard as true After each statement of facts you will find several possible inferences — that is, inferences which some persons might make from the stated facts I xamine each inference separately, and make a decision as to its degree of truth or falsity

On the Answer Sheet you will find for each inference spaces marked with the letters T, PT, ID, PF, and F For each inference make a mark on the Answer Sheet under the appropriate letter as follows

> **T** — if you think the inference is *definitely true* that it properly follows from the statement of facts given
>
> **PT** — if, in the light of the fact given you think the inference is *probably true*, that there is better than an even chance that it is true
>
> **ID** — if you decide that there are *insufficient data*, that you cannot tell from the facts given whether the inference is likely to be true or false
>
> **PF** — if, in the light of the facts given, you think the inference is *probably false* that there is better than an even chance that it is false
>
> **F** — if you think the inference is *definitely false* that it cannot possibly be drawn from the facts given or that in some manner it contradicts the facts

Sometimes, in deciding whether an inference is prob ably true or probably false you will have to use certain commonly accepted knowledge or information which practically every person knows This will be illustrated in the example which follows
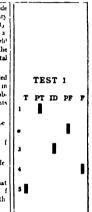
Here is the example, the correct answers are indicated in the block at the right

EXAMPLE A thousand eighth grade students recently attended a voluntary week end conference in a Midwestern city At this conference questions of race re a tions and means of achieving lasting world peace were discussed since these were the problems the students felt to be most vital today	
1 As a group the students who attended t is conference had a keener interest in humanitarian or broad social prob lems than mo t eighth gra le students have	TEST 1
I he majority of the e students were be tween the ages of 17 and 18	
3 The students came from all sections f the country	
4 The udents came to discuss tra le union prol lems	
5 Some eighth grade tudents felt that discu on f race relation and means f achieving world peace might be worth whie	

In the above example, inference 1 is *probably true* (PT) because (as is common knowledge) most eighth grade students are not likely to evidence such serious concern with broad social problems

Inference 2 is *probably false* (PF) because (common knowledge) there are relatively few eighth grade students in the United States between 17 and 18 years of age

There is no evidence for inference 3 Thus there are *insufficient data* (ID) for making a judgment in the matter

Inference 4 is *definitely false* (F) because it is given in the statement of facts that race relations and means for achieving world peace were the problems discussed

Inference 5 necessarily follows from the given facts, it therefore is *true* (T)

In the exercises which follow, more than one of the in ferences from a given statement of facts may be true (T), or false (F), or probably true (PT), or probably false (PF), or have insufficient data (ID) to warrant any conclusion That is you are to consider each inference by itself

Make a heavy black mark in the space under the letter that you think best describes each inference If you change an answer erase thoroughly Make no extra marks on the answer sheet

[2]   •   *Go on to the next page.*

FIG 14 1 *The directions page of the Watson-Glaser Critical Thinking Appraisal Test From Watson and Glaser [406]* •

retest—the lower the reliability, the greater the fluctuations that are likely to occur

Reliability is rarely computed for teacher-made tests, but it is an obvious fact that a student will occasionally get a score on a test which is not typical of his usual performance This is particularly true in high school and college courses where the content is so extensive that, unless a number of tests are given, the final grade will be based on a relatively small sampling of the course, especially when essay questions are involved It is also obvious that tests are generally not sufficiently reliable for a student's grade in a course to be decided on the basis of a difference of two or three points, hence, the need to scatter student performance over a wide range so that whatever grade is given will be assigned with a certain degree of fairness

USABILITY

The third characteristic of a good test is usability which combines such features as cost, ease of administration and of scoring, attractiveness, and other practical considerations These are, of course, secondary in importance to validity and reliability but, if two tests are of essentially comparable validity and reliability, factors such as cost should be considered, especially if many children are to be tested If only a few students are to be tested, for example, the greater ease of construction of the essay examination as compared to the objective-type test might outweigh the greater difficulty in scoring whereas, if large numbers are involved, a teacher may save himself time and effort by devising an objective test [9] It might also 'be pointed out in passing that [a] the construction of a good teacher-made test can be very expensive from the standpoint of teacher time and energy unless the teacher goes about it in a systematic way, and [b] with the small cost of reproducing tests by ditto or mimeograph processes, there is little excuse for teachers having children read test questions from the blackboard

Kinds of Tests

Academic tests are of various kinds depending on the function they are to serve and, consequently, they can be categorized in a number of ways depending on the purpose and the basis of classification Some

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[9] Such features as excessive length, unattractive format, difficulty in administration and scoring are often reflected, via decreased motivation and errors, in lowered validity and reliability

of the more common distinctions among academic achievement tests will be discussed in the next few pages

TEACHER-MADE AND STANDARDIZED TESTS

A teacher-made or informal test is one constructed by the teacher generally with the particular objectives of his course in mind Therefore, except for the poor quality sometimes noted in such a test, it tends to be reasonably valid Its greatest weakness lies in the lack of a standard of comparison on the basis of which the performance of the class can be evaluated Standardized tests are generally constructed by experts, standardized on a representative sample of the group for which the test is intended, and made available commercially Their greatest advantage over the informal test is that they provide an outside standard or norm [10] for the evaluation of pupil performance Their greatest weakness is that they are often oriented toward a somewhat different set of objectives than those which may be emphasized by a given teacher in a given class Standardized tests have to operate on the assumption that, regardless of the locale and conditions under which a given course is offered and the individual variations that are bound to occur in teaching any course, there are still broad general objectives that are common to all courses of a given title Thus, despite variations that may occur from instructor to instructor and from school to school, there are common objectives that apply to all courses in American history at the high school level, for instance To the extent that this assumption is correct—and it is likely to be reasonably correct in such fields as reading where relative uniformity of objectives can be expected—a standardized test tends to be valid for a number of classroom situations If, however, local class objectives differ from those toward which the test is oriented, the class will be at a disadvantage by comparison with the standardization group and therefore test norms will not be valid for that class

Standardized tests are available for almost all areas of the grade school and high school and it is up to the individual teacher to decide whether a given test would have sufficient validity for his particular purpose and circumstances to warrant its use in his class Some of these tests are parts of a complete battery covering all the areas of grade school, for instance, whereas others are single tests available for such specific purposes as the measurement of reading readiness or silent reading

OBJECTIVE AND SUBJECTIVE TESTS

Test items can be either objective or subjective (i e, essay), depending on the objectivity or subjectivity of the scoring Wholly objective

[10] Norms are not standards of excellence not minimal standards but simply standards of comparison

test items include the multiple choice, the true-false, and the matching, the answers to these are either right or wrong and a clerk without knowledge of the course material can score the students' papers In the less strictly objective items, namely, the completion and the simple recall, the situation is essentially the same, although a small degree of subjectivity may be involved The essay type of test, on the other hand, cannot be graded soundly unless the grader has a sufficient grasp of the subject to judge the quality of a given answer

The relative merits and preferences for the objective- and the essay-type test have been debated on numerous occasions, often with more heat than light, and some of these arguments will be reviewed shortly Most teachers prefer objective items once they have become accustomed to them, but many would not think of using them Likewise, students are divided as to which type they like best, their preference perhaps depending on the nature of their relatively limited experience with tests Obviously, much depends on the nature of the course content, on the way the questions are asked in relation to the way the course is taught, on the instructor and his ability to set up good questions, and on the tested person's experience with the two types of tests Actually, neither is superior to the other each has its relative advantages, or more correctly, each is more valid than the other in certain situations The problem is one of locating the situations for which each is the more valid Similarly, there are people who object strenuously to one or the other of the objective-type items, e g , the true-false Again, each type of item has its purpose and there are certain aspects of the content of almost any course that lend themselves to the true-false, others to the multiple choice and, of course, certain content and certain objectives call for the use of the essay test It is not a question of which is superior but rather where to use each most advantageously It follows that measuring devices would almost of necessity have to be varied in order to deal adequately with the different objectives, the different subject-matter contents, and the different psychological processes that need to be measured None of the items has a monopoly with respect to the various aspects of instruction and certain parts of a given course can probably be measured in more than one way

Probably the greatest advantage of the objective-type test is that of wide sampling resulting from the fact that each question is relatively short Hence, there is greater likelihood of covering more of the objectives of a given course and, therefore, a tendency toward greater validity and reliability in most situations Another major advantage of the objective-type test is the more or less complete objectivity in scoring leading to a

high degree of reliability, while a third advantage is the ease of scoring which is particularly important in large classes where the extra work necessary to construct an objective test is more than compensated for by the saving in scoring time and effort. This is especially so when IBM scoring machines are available, but even when a stencil is used over separate answer sheets, the teacher can save himself may hours of tedious labor scoring answers

Among the advantages of the essay-type test can be listed the following [a] It measures certain objectives that cannot be measured effectively in any other way, as for example, ability to organize and express ideas [11] It should be noted in passing that, valid as this argument may be, it is probably safe to say that those who condemn objective tests as being completely inappropriate for their purpose probably have not explored too closely their possibilities [b] Research [263] has shown that preparing for the essay-type examination brings into play a higher level of learning, e g , organizing data as opposed to picking out isolated facts, than does the objective-type test It may even promote more as well as better learning, for the objective test, requiring recognition rather than recall, may give the learner a false sense of knowledge The essay test is also somewhat more effective in revealing the process by means of which the student arrives at the answer and is, therefore, somewhat more useful from a diagnostic point of view

As was implied in discussing the advantages of the objective test, the disadvantages of the essay-type test lie largely in the area of limited sampling and of subjectivity and labor in scoring The essay test, requiring as it does the writing of many words in order to bring out an idea, is very wasteful of the testing period (courses where ability to organize and express ideas excepted), so that only a small segment of the total content of the course can be covered in a one- or two-hour testing period Hence, limited reliability and, in many cases, limited validity—especially since penmanship, verbal fluency, ability to make shrewd guesses as to what is likely to be included in the test, ability to bluff, and certainly ability to avoid misinterpreting the questions occasionally play as important a part in getting a good score as does knowledge of the subject From the standpoint of scoring, educators have, for the last half-century, been concerned over the fact that not only is an instructor not likely to agree with other graders as to the quality of a given essay paper, but he is not even likely to agree with himself if he rescores the same paper In one study [365] the grades given a geometry

[11] Some people fear that constant use of objective-type tests will lead to inability to use effective expression

paper by different raters ranged from 28 percent to 92 percent In a study by Falls [112], an English composition was graded from 60–64 by three out of the hundred raters to as high as 95–99 by seventeen raters A similar inconsistency in grading can be noted in the results of a study by Arny [12] shown here in which twelve raters, grading seven papers in
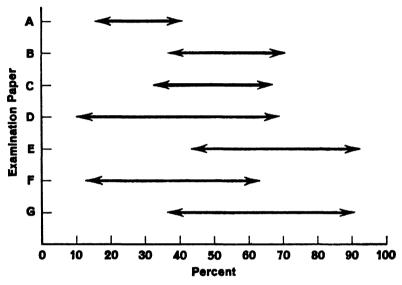
FIG 14 2 *Range of scores assigned by twelve teachers to seven essay examination papers After Arny [13]*

home economics, disagreed by a minimum of 18 percentage points on one paper to as high as 61 points on another Most interesting, however, is the case reported by Crow and Crow [79] in which a group of experts, in order to objectify their ratings, prepared a model to act as a guide in scoring the papers—only to have one rater, who did not know that this model had been included, actually fail the model The essay examination can be frustrating to both raters and students It often takes great concentration on the part of the teacher to decipher meaning out of the student's clumsy expression and it takes wisdom and patience to decide whether the student is just awkward or whether he is trying to cover up his lack of knowledge of the question Likewise, students are often frustrated by the essay-type test because they don't always know what the instructor is after and how deeply they are to go into the question Thus, the essay examination has a number of limitations, some of which are inherent in this type of test Others stem from misuse some of the weaknesses mentioned could be reduced by devising clear-cut

questions [12] and by working out a system for scoring papers more objectively Thus, not only have Stalnaker and Stalnaker [363] obtained reader reliabilities in the 80 and 90 when essay examinations are graded by experienced raters operating according to certain scoring rules but it is the consensus of experts in the field [429] that, when properly used, essay and objective examinations measure essentially the same thing

OTHER KINDS OF TESTS

A number of other technical terms referring to various kinds of tests of academic achievement could be introduced However, because of limitations of space, discussion will be restricted to the following

Power and speed tests A power test is one in which the items range from very easy at the start to very difficult toward the end, which is usually administered with very liberal time limits In a speed test, on the other hand, the items are relatively of the same difficulty but the time limits are such that the more a person has to ponder over his answers the more likely he is to have time called before he has been able to cover many of the items There is a definite trend away from speed tests and most modern tests incorporate some increase in the difficulty of the items along with rather liberal time limits Research evidence [75], for example, suggests that maximum validity is obtained when the time limits are set so that approximately 80 percent of the students can finish in the time allowed

Survey and diagnostic tests A survey test is one that gives in a single score an all-round measure of the student's achievement in a given area, e g , the child's grade level in reading A diagnostic test breaks this total score into subscores such as speed of reading, vocabulary and comprehension and provides separate norms for each of these subskills so that a person's specific strengths and weaknesses can be determined These subscores provide the basis for remedial work where such is indicated However, it should be remembered that frequently these subscores are based on relatively short subtests As a result, they may incorporate a considerable element of error and should, therefore, be interpreted rather cautiously

Prognostic tests A prognostic test is one designed to predict probable achievement in a given area Thus, a Latin or an algebra prognostic test

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[12] Teachers sometimes supply questions of the variety "Discuss the implications of the Treaty of Versailles' (Why not "Describe the universe and give two examples?) On the other hand, when they make their questions too narrow and specific, they destroy the very purpose for which essay questions should be used in preference to objective items Thus, List three characteristics of a good measuring instrument" is not an effective essay-type item

indicates likely achievement in those fields Likewise, the Coxe-Orleans Prognosis Test of Teaching Ability [77] is designed to give an indication of possible success in the field of teaching It should be noted, incidentally, that all tests are prognostic an intelligence test, for example, is prognostic of likely success in those fields in which success and failure are related to IQ

Construction of Tests

Modern testing of academic achievement is as complicated a task as any other aspect of the teacher's job and, obviously, a great deal can be said on the subject of test construction, but space does not permit adequate treatment here This discussion is therefore for the purpose of orientation only and the student is referred to the many books on educational tests and measurements for a more thorough coverage [13]

Probably the most meaningful and helpful advice that may be given a young teacher on the subject of test construction is to suggest that he accumulate and organize a file of evaluative material in the same way as he accumulates and organizes instructional material Thus, keeping test questions on 3×5 cards such as the one shown here will make good testing possible without an undue expenditure of time and effort This does not mean repeating the same test over and over any more than accumulating instructional material implies using the same set of notes year after year

It is also worthwhile to mention that good testing calls for a multiple approach and that each approach, each type of test, and each type of test item has its particular merit and that it is up to the teacher to make the most effective use of the many testing devices at his disposal As situations vary, the testing procedures should also vary Thus, in general, the most effective way of evaluating learning is to ask the student to apply what he has learned to a somewhat different situation, preferably one in real life But this is not always possible One can also do an effective job of measuring progress by means of discussion, reports, and question-and-answer procedures Such techniques incorporate immediate reinforcement, correction of errors, and clarification of issues along with high motivation, but they are ineffective and impractical in a large class In other words, the test must be tailor-made for the particular group for which it is intended

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[13] Stated bluntly, if all the reader knows about testing is covered in this chapter, he does not know enough to be effective in this important area of teaching

Ed. Psy.   Objectives: 1 (d)
Unit:Tests & Msrts.   2 (a), (b), (f)

A 15-year-old boy with an IQ of 67 has an educational
age of 12.

(a) He has an IQ higher than his EQ.
(b) He has an EQ higher than his AQ.
(c) He has an AQ higher than either his IQ or his EQ.
(d) He has an IQ, EQ, and AQ, all below 100.
(e) One of the EQ or the AQ cannot be calculated
        without additional information.

Front of Card

Answer: (c)   Source: Ch. 14

Results: .   Diff.   Disc.

    15/20 : 9/20 (Feb.'57) 24/40   15/9
     8/11 : 5/11 (May '58) 13/22   8/5

Comments:

Reverse Side

Results show that when used in February 1957 the item was passed by fifteen
students in the top quarter and by none students in the bottom quarter of the class
(actually 27 percent of two sections given a group examination) for an over-all
difficulty index of twenty-four (passing the item) out of forty (students in the top
and bottom quarters combined) and a discrimination index of fifteen to nine The
item was again used in May, 1958 with the results shown

Among the many rules on the construction of academic achievement tests that may be given for the direction of teachers, the following are mentioned merely by way of illustration [a] Use a variety of measuring devices different objectives call for different testing methods [b] Sample widely and use a variety of test items [c] Keep the difficulty level of the items such that the average student will obtain a raw score approximately 50 percent of maximum [d] Make essay questions sufficiently restricted in scope that the student can collect and organize his ideas on the subject and express his thoughts effectively [e] Make the questions clear, avoid trick or controversial questions, and avoid giving clues as to the answers [f] Do not give optional questions, it is difficult enough to compare performance on the same task without complicating the problem by giving choices

Interpretation of the Results of Testing

Probably the greatest source of error connected with testing is in the interpretation of results rather than in the testing itself A teacher should be able to devise, if necessary, and administer a test in his subject area, but the meaning to be attached to the results of a test calls for a somewhat greater degree of understanding of the theory of educational tests and measurements than many teachers seem to possess

MEASUREMENT AND EVALUATION

As is implied in the early part of the chapter, academic testing involves two interrelated processes measurement and evaluation So far we have considered the first, namely, the construction of a good test from which to derive a valid and reliable score The more important question of the interpretation of this score, i e, the evaluation of the student's performance, now lies ahead Actually a score has no meaning in itself it can take on meaning only as it is interpreted in the light of such other factors as the goals of education, the objectives of the particular course, the nature of the child, and the nature of the test upon which the score is based Thus, sixty items right out of a hundred items may represent adequate or inadequate performance depending on the difficulty of the test and of scoring, the validity of the test from the standpoint of the objectives of the course, the ability level of the child and his background, and a number of other considerations If an entire class does poorly on a

specific test it is not necessarily cause for alarm unless the test is one that has been oriented toward objectives stressed by the school

Implied in the distinction between measurement and evaluation is the fact that performance is not to be interpreted in terms of an absolute standard of perfection but rather in terms of a realistic standard of what, in our judgment with respect to certain criteria, is desirable and reasonable to expect in attainment As we evaluate a pupil's performance, we may make a judgment to the effect that, as measured, it is not of high level but that it is satisfactory in view of the particular circumstances involved In a different situation, perhaps involving another student in more favorable circumstances, we may judge as unsatisfactory a performance actually superior by objective measurement to that we judged satisfactory in the first pupil's case

THE NUMBER SYSTEM

In order to interpret the results of testing one needs to be familiar with the theory of numbers which underlies such interpretation Numerical series can be either ordinal (e g , first, second, third,) or cardinal (e g , 1, 2, 3,) Cardinal series, in turn, can be either absolute or displaced depending on the nature of the zero point An absolute cardinal series is one which starts with a true zero and increases in equal units such as feet, miles, pounds, or minutes A displaced cardinal series, on the other hand, usually has equal units, but it starts from an arbitrary zero point rather than from the true zero

The distinction is fundamental to an understanding of educational measurements In displaced cardinal series, e g , the Fahrenheit temperature scale, all that can be indicated is "more than" or "less than", we cannot, for example, say that a temperature of 20 degrees above zero is "twice as hot" as a temperature of 10 degrees above zero Except for such cases as "words typed per minute" and "baskets made out of 20 free throws in basketball," nearly all of the measurements in education and psychology with which the teacher comes into contact are on a displaced cardinal series Thus, a zero on a test does not imply complete lack of performance on the subject but simply zero performance on the test material, the difficulty of which may well be far above the true zero A person might not get a single word right on the spelling test, for example, and still be able to spell many words which were not included in the the test Since the teacher has many choices as to which words he is to include in a test, it would be possible for a student with a given spelling ability to get 95 percent of the words on the list if the teacher concen-

trated on easy words, only 50 percent if the teacher concentrated on more difficult words, and perhaps practically none of the words if the teacher selected only difficult ones This situation, shown here graphically, demonstrates the fallacy of using a percentage of maximum to label a
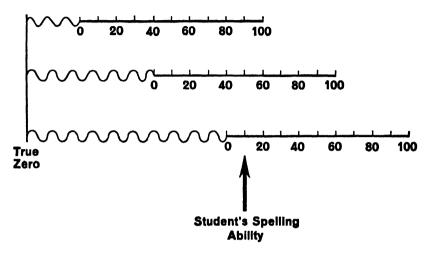
Fic 14 3 *Different numerical measures of the same ability in three different displaced series*

student's performance unless we know the level of difficulty of the question and of the scoring, percentage of maximum is completely mean-ingless

RAW *versus* DERIVED SCORES

To be told that a certain student obtained, say a score of 60 out of a maximum of 100 on a spelling test tells us nothing beyond the fact that he has a spelling ability greater than zero Since scores in spelling are based on a displaced cardinal series, the only thing that will make them meaningful is to convert them into some form of *derived* score which will relate his performance to that of the other students who have taken the test The next few pages will be devoted to a consideration of some of these derived scores

Percentile rank in a given group If a student s performance puts him at the 5th percentile of high school seniors, i e , if his score is exceeded or equalled by 95 percent of the group of which he is a member, we can picture his performance as relatively poor This is more meaningful than to say he has a raw score of 60 percent on a test of unknown difficulty which could represent, for all one knows, anywhere from the highest score in the class to the lowest

Age or grade scores When a test maker, say of a test in reading for grades seven through nine, has completed the final draft of his test, he administers it to a random sample of children in those grades Then in scoring the papers, he scores separately the papers of the children who were 12–0 at the time of testing, then those who were 12–1, and so on, and he calculates the average raw score for each age, month by month Thus, the table of norms for the California Reading Test [394], an excerpt of which is reproduced below, shows that the children in the standardiza-

TABLE 14 1

NORMS FOR THE CALIFORNIA READING TEST *

Raw Score	Age Norm	Grade Norm
77–8	12– 4	7—0
79	12– 5	7—1
80–1	12– 6, 7	7—2
82	12– 8	7—3
83–4	12– 9	7—4
85–6	12–10	7—5
87	12–11	7—6
	ctc	

* from Tieg and Clark [394]

tion sample who were 12–4 at the time of testing averaged a raw score of 77–78 Likewise a raw score of 79 is average for the children who were 12–5 when tested Therefore, if a child taking this test gets a raw score of 79 he would be said to have a reading age of 12–5, i e , he would be said to read at the level of the average child of 12–5 in the standardization sample

In the same way, in the standardization of the test, the papers of the children just beginning the seventh grade at the time of testing are scored separately and so on for the children in the first second, month of the seventh grade and averages for each month are obtained and incorporated into the tables of norms Thus, as also shown in the table above, the child getting a raw score of 79 on the California Reading Test would have a reading grade of 7–1, or he would read as well as the average child in the first month of the seventh grade included in the standardization sample

Educational and achievement quotients Just as a reading age can be obtained from a standardized reading test so various educational ages can be obtained for the different areas for which standardized achievement tests exist (particularly in the elementary grades where an arith-

metic age or a spelling age is meaningful as opposed to the college level where such measures as percentile ranks would be more appropriate) However, a given educational age is relatively unimportant by itself, for it would make a difference if the person involved were young or old, bright or dull So there is a need to relate this educational age (EA) to both the student's chronological age and his mental age This can be done by means of the Educational Quotient (EQ) and the Achievement Quotient (AQ) which have been devised for that purpose and defined as follows

$$EQ = \frac{EA}{CA} \times 100$$

$$AQ = \frac{EA}{MA} \times 100$$

Thus, a student with a CA of 10, an MA of 12, and a reading age or an EA in reading of 11 (as determined by a standardized reading test) would have an

$$EQ = \frac{EA}{CA} \times 100 = \frac{11}{10} \times 100 = 110$$

$$AQ = \frac{EA}{MA} \times 100 = \frac{11}{12} \times 100 = 93$$

Since the average child of a chronological age of ten would also have a mental age and a reading age of ten, both his EQ and his AQ would be 100 Therefore, the student above is accelerated by comparison to his age-mates but he is retarded by comparison to children of his mental age

Similar computations could be made of the EQ and the AQ of each child in each of the subject-matter areas evaluated by standardized tests that give educational ages Since most elementary and junior high school teachers would have these educational ages provided them by their standardized testing program administered sometime during the year, they could plot the EQ's and AQ's of each child on a profile as shown in Figure 14 4 as a means of depicting where he stands

In practice, gifted children are generally accelerated from the standpoint of EQ and dull children are retarded This is fully understandable since academic progress should certainly be related to intelligence From the standpoint of AQ, however, the gifted child is most often retarded while the dull child is accelerated, i e, the educational growth of the bright child does not keep up with his mental growth whereas the dull child is more advanced academically than younger children who have

the same mental age by virtue of being brighter Burt, [52], for example, found children with IQ's in the 85 to 95 range to be the best educated in the sense of being academically advanced with respect to their mental capacity Why this should be is not clear but one might suspect that such
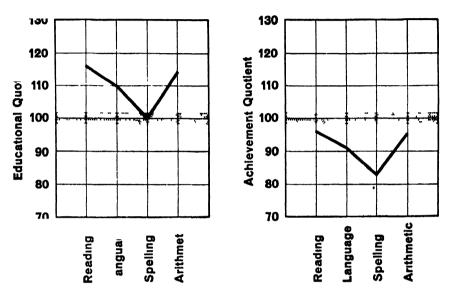
FIG 14 1 *Profile of educational and achievement quotients, based on the following hypothetical data*

$$C \, A = 10, \; MA = 12, \; IQ = 120$$

Educational Ages		EQ	AQ
Reading	11-6	116	96
Language	11-0	110	91
Spelling	10-0	100	83
Arithmetic	11-4	114	95

Educational ages can be obtained for most basic subject areas of the grade school Thus the Stanford Achievement Test (elementary) gives educational ages in the four areas shown in the profiles above (Actually the reading score is a composite of separate educational-age scores in paragraph meaning and word meaning and the arithmetic score is a composite of arithmetic reasoning and arithmetic computation)

a situation is related, at least in part, to the fact that teachers neglect the bright and do not spur them to make use of the mental powers with which they are endowed while, at the same time, they prod and push the dull to a higher level of relative efficiency than is common among the bright This was the position taken as early as 1922 by Franzen [122] who interpreted correlations of −5 and −6 between IQ and AQ (despite

the fact that special promotions helped reduce the "handicap of brightness') as evidence of the educational mistreatment of the bright

Some authors, on the other hand, feel it is unrealistic to expect the gifted child to attain an AQ of 100, i e , they feel it is unrealistic for the educational growth of the gifted child to keep pace with his mental growth They point to the fact that a child of $CA = 6$ and $MA = 9$ who has not yet entered school might not have a reading age of nine which he would need to have in order to obtain an AQ (in reading) of 100, an argument which would be true of the preschool child whose mental age falls in the school-age bracket However, a bright child should, on entering school, be able to gain on the other children of his mental age who are older than he Thus, Horn [183] suggests that a realistic divisor for computing the AQ of gifted children would be an average of the MA and CA for children from age six to eight but the MA and CA weighted in the ratio of three to one for children of twelve and above

Another argument against the use of the AQ is that intelligence (and mental age) is not the sole, or even the principal, determinant of academic growth This is, of course, true but it begs the question mental age might be more of a determinant of achievement if teachers ceased spending an undue amount of time with the dull to the neglect of the bright It is also said that, since both the educational test age and the mental age are subject to error, there may be quite a compounding of error in the AQ This may be a good argument against the use of the AQ on an individual basis but it does not account for the fact that the gifted as a group have low AQ s, since errors of unreliability tend to cancel out whereas, apparently, this is a constant error Another argument is that, since there is, as we have seen, an overlap of some 90 percent between the content of academic and intelligence tests, the same factors are included in both numerator and denominator of the fraction so that the ratio of the two is meaningless This argument is well taken, but, to the extent that it is valid, it would tend to make the AQ of all children closer to 100 and would not explain why the AQ's of the gifted fall below 100 Even regression toward the mean would not account for the low AQ on the part of the gifted since it would affect both numerator and denominator unless the ceiling were to be lower in the achievement test than in the intelligence test [14]

- Thus, from a theoretical point of view, there does not seem to be any convincing argument to suggest that it is illogical to expect the gifted

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[14] The present discussion is not to be construed as an attempt to push the AQ It is simply intended to point out that attempts to brush off the low AQ performance of gifted children as a group are generally unconvincing

child's educational growth to keep pace with his mental development The fact remains, however, that in practice gifted children as a group tend to be retarded by reference to their mental age Terman's gifted had AQ's in the region of 95 On the other hand, there are exceptions there, too Gray and Hollingworth [153], dealing with thirty-five and fifty-six gifted children from two New York schools—one group on a half-day enrichment program, the other in a regular classroom situation—found AQ's for the two groups very close to 100 Similar results, showing groups of gifted children with an educational age on a par with their mental age (i e , with an AQ equivalent to their IQ) have been reported by other investigators Some of these are reproduced in Table 14 2

TABLE 14 2

SUMMARY OF SELECTED STUDIES OF THE RELATIVE ACHIEVEMENT
OF GIFTED CHILDREN *

	Investigator and Date				
	Terman [40]	Gray and Hollingworth		Burks, Jensen, and Terman	Patrick
	1925	1931		1930	1924
N	566	36	56	53	25
IQ	151	151	157	141	142
Arithmetic	138	153	156	128	139
History and Literature	—	152	156	134	139
Language Usage	147	—	—	141	141 .
Nature Study	—	115	144	—	129
Reading	145	152	152	141	143
Spelling	139	149	154	124	124

* abbreviated from Miles [264]

Whether this evidence supports the claim that, if gifted children are provided with an enriched curriculum, their academic progress keeps pace with their mental development, is a matter of debate Nevertheless, it would seem worthwhile for a teacher to plot individual profiles in term of EQ and AQ and, wherever a child appears to be working below capacity, to ask himself whether he has done all he can to help him It will, of course, be found that most students are more advanced in some areas than in others This may be explained on the basis of the relative strengths and weaknesses of their different aptitudes or special motivations, but it might also suggest areas in which the student is in need of remedial work   •

The comparison between educational growth and mental growth

represented by the AQ could also be shown in terms of underachieve-
ment and overachievement [15] If, on one axis, we plot the mental ages (or
the IQ's, if the students are relatively of the same CA) of the students
and, on the other axis, their educational status and if furthermore, we
draw in the averages, we will have four quadrants as shown in the chart
at the left In a belt comprising Quadrants 1 and 3 and a small corner
of the other two quadrants (since tests are always of limited reliability)

Ability
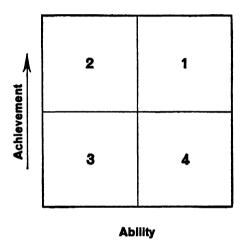
Fig 14 5 *A comparison between educational and mental growth*

we have students who are achieving more or less according to their
ability In Quadrant 4 are students whose achievement relative to the
group puts them below their relative standing in ability and who are,
therefore, called underachievers In this group, we would find many
children who are disinterested, children in need of remedial help, and chil-
dren who have emotional problems This group should be a challenge
to the teacher In Quadrant 2, on the other hand, are the overachievers
who do better than one would expect them to on the basis of their ability
Some of these overachievers arise as a result of the mismeasurement of
their mental age, but that still leaves a sizable group who perhaps have
effective work habits or who are strongly motivated to achieve One
might be tempted to pat them on the back and say "All the more power
to you!", yet some of these students may be displaying signs of neurotic
perfectionism and the question may well be raised "Are they perhaps
paying too high a price for their achievement in terms of neglected social

[15] An advantage of this technique over the AQ is that it does not have to be based
on standardized tests It can be drawn in terms of the ranks of students on ability
and achievement on any reasonably dependable test

participation and other aspects of personal growth?' At any rate, the teacher has a responsibility to both the underachiever and the over-achiever and, whereas differences are likely to exist from individual to individual, a definite possibility in the treatment of both lies in reducing the anxiety level—of the overachiever so that he can afford to accept him-self at a more natural level—of the underachiever so that he can afford to try.

Grading

RATIONALE UNDERLYING GRADING

The grading period is rough on teachers and pupils alike Many teachers, for instance, are not too sure of the point of pinning a grade onto a student's achievement and the purpose it is to serve in the school's function of promoting his all-round growth To many conscientious teachers, grading has the flavor of a postmortem—in some cases, the flavor of retaliation for what is past—whereas evaluation should be di-rected toward the future Some teachers feel that grading actually inter-feres with sound evaluation in that one single mark cannot provide the diagnostic basis upon which to orient the growth of the child during the next grading period Likewise, except for the gifted and those who have ceased to care, students also eye the grading period with considerable discomfort All this coming after a rather exhausting period of preparing for or grading examinations leaves everyone rather cold

The obvious question that needs to be considered before going any further on this topic is "Why grade at all?' And, in this connection, it must be made clear that the fact that we have accepted the necessity for evaluation does not automatically point to the necessity of grading, since evaluation does not have to eventuate in a grade All that a grade can be expected to do is to provide a synthesis—perhaps a misleading synthesis—of the various aspects of the evaluation Thus, a good grasp of computational skills, a limited understanding of problem solving, and a relative weakness in the area of the use of formulas might be synthesized into a *D* Whether this synthesizing is desirable would depend on the purpose involved

When grading is considered from the standpoint of purpose, a dis-tinction needs to be made between what might be called the public-school and the professional-school approach In a professional school, e g , in a medical school, grading is oriented toward the protection of society

from incompetence among persons offering professional service Similarly, in teacher training, the college sets certain standards of attainment and, for the protection of the children who might be harmed by having an incompetent teacher, fails any prospective teacher who is unable to meet these standards Here, grades are a screening device and the welfare of society takes precedence over that of the individual aspiring to professional status In the public school, on the other hand, measurements and evaluation have, as their primary purpose, the determination of the student s status as a prerequisite for planning his further growth Presumably then, a student would be failed only when his teacher is convinced that his growth can be promoted more effectively in his present grade than in the next Likewise, the teacher giving a child a low grade on an assignment or on his report card would have to be reasonably sure that giving this low grade is the best way of promoting his subsequent growth To deny this would imply that the school is operating at cross-purposes

OBJECTIONS TO GRADING

Grading is not without its dangers in fact, grading could easily negate all that the school is trying to accomplish through sound teaching and sound evaluation Among the objections that could be made from a psychological point of view against most of the grading done in our schools, the following deserve mention

[a] Grades are inadequate indications of the total development of the child and a single letter grade or even two cannot possibly cover all the aspects of growth which the school is trying to promote in any one subject-matter area Schools with but a single grade must have but a single objective, since a single grade cannot reflect multiple goals When teachers are forced to concentrate their whole evaluation of a child s performance into a single letter grade, this mark becomes such a composite that it is essentially meaningless Since, as with any other symbol, a grade is useful only to the extent that it evokes the same meaning in the child and in the parent who receives it as it did in the teacher who sent it—and there is serious question about its doing that—it tends to be wasted motion except that it can do harm In a sense, this is not unlike life situations where positions and promotions are given on the basis of an over-all appraisal finally synthesized into a "yes" or "no" But, from the point of education where the aim is the guidance of future growth of the child, responsibility for whom we have accepted, such a mark is useless since he knows neither its meaning nor the direction in which he should apply himself in order to improve Such attempts have been made to give separate grades for the academic as opposed to the citizenship

aspects of the child's school behavior but probably most teachers, consciously or unconsciously, include as part of the academic grade such things as effort, docility, and attitude along with a number of academic considerations

[b] Grades have a great effect upon raising the anxiety (motivational) level of the child This can be desirable in the case of certain students but, for others, grades may have detrimental effects ranging from psychosomatic disorders to feelings of resentment, hostility, frustration, and discouragement [16] The child often interprets a grade not as an evaluation of his work but as an evaluation of himself with resulting conflict in his self-image Furthermore, it leads to worry over past or future failures and, thus, detracts from the child's effectiveness in dealing with the present and in planning for future improvement

[c] As previously stated, grades often become ends in themselves so that learning is cast into a secondary role Grades have motivational value but there are more positive, and less dangerous, means of motivation Otto and Melby [288], for instance, found no difference in the achievement of children threatened with failure and those assured of promotion It would seem fair to suggest that teachers who rely on grades as their principal incentive must be pretty poor teachers indeed, for this sort of incentive, besides soon losing its effectiveness, tends to negate every value for which the school stands As stated in connection with motivation, such incentives appeal to a small fraction of the class only and actually repel the remainder who have to build up a front of, indifference in order to maintain status and self-esteem and avoid conflict in their self-image

[d] Teachers often find that giving a child a low grade destroys the pupil-teacher relationship which they have been trying to cultivate Many children, rather than blaming themselves for a low grade and readjusting their self-image, resolve the conflict by projecting the blame onto the teacher—and, parenthetically, there is enough invalidity and unreliability in the average test to make this entirely plausible, especially to a child in need of protecting his self-image The problem is even more acute when these grades are used as the basis for reports to parents, a topic we shall discuss presently

[e] A more commonly noted criticism of grades is their undependability from the standpoint of validity and reliability Thus, students often get grades which are not representative of their true academic ability

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[16] In the 1938 Commonwealth Fund Report on Mental Health and Education, grades and promotions headed the list of serious school handicaps to mental health along with recitations, homework, examinations and marks .

This may result from any number of causes, among which can be listed limited testing, the inclusion of extraneous factors in the grade, and a lack of understanding on the part of the student of what he was to cover

A student occasionally gets a lower grade than he really deserves because of undue difficulty in the examination or in the grading Some teachers pride themselves on being tough and proceed to appoint themselves as watchdogs of scholastic standards Besides reflecting some personality problems which might be of interest to a psychiatrist and considerable lack of understanding of the principles of sound evaluation, such teachers are only deceiving themselves—while doing considerable harm to some students In a high school, for instance, the poor students who are assigned to this teacher are automatically deprived of the recognition for academic performance supposedly available to all and they get to feel "What's the use? We won't get a good grade anyway!" so that performance goes down, not up In the meantime, students are being penalized, not for a lack of preparation, but simply for the poor choice of an instructor There ought to be more constructive ways of maintaining standards and the teacher who, year after year, turns in grades lower than those of other instructors only shows himself as a poor teacher or a misguided reformist whose objectives are out of line with what he and his students can do It might be questioned whose failure it is when wholesale grades of F are given, for after all, as pointed out by Blair [34], failure on the part of students implies improper placement, unsuitable course content, inappropriate goals, or poor teaching, all of which are at least as much the responsibility of the teacher as they are that of the student Whereas every teacher is bound to have a somewhat different point of reference in assigning grades, the school should agree upon a common policy of grading consistent with its philosophy, its student body, and its faculty and there should be reasonable uniformity in the grading practices of the different teachers

Grades often incorporate more than just a bit of downright injustice Not only has study after study shown that both men and women teachers give higher grades to girls for equal or lesser performance [53] but Lobaugh [240], for instance, found that the boy who ranked first in his class in terms of standardized test scores actually failed to graduate while the valedictorian ranked 36th and the salutatorian ranked 105th In three consecutive years, eight out of ten of the top scorers on the objective tests were boys but girls were much more frequently on the Honor Roll than boys [17] This evidence, of course, applies to groups and does not relate to

[17] Many high schools using the College Entrance Examination Boards are having their faith in valdictorians and salutatorians sadly shaken

the many cases where an individual student gets an undeserved grade simply because the teacher consciously or unconsciously likes or dislikes him or her Goodenough [149], for instance, found a correlation of 40 between the direction of errors in scoring spelling papers and the rating of personal attractiveness of the children

SELF-EVALUATION

We have considered some of the criticisms of grading, the psychological implications of which need to be clearly understood by the teacher Whereas each case has to be evaluated on its own merits, the teacher needs to consider that giving a student an *F* or writing a comment about his being "lazy' or "undependable" is much more likely to have negative effects on the student's concept of himself than it is to bring about an improvement in his performance He needs to consider as a definite possibility that the child will be forced to reject not only the idea but also the teacher to the point where he can no longer be of any help to him—or that the child will accept the idea and incorporate it into his self-image and orient his behavior accordingly

Some of the problems associated with grading are difficult to handle What, for instance, is to be done when the teacher knows that the child's parents will punish him severely unless he brings home a good report card? Or, when reporting the low grade will make the boy ineligible for sports which is the only thing that keeps him in school? It may be true that the child is at least partially responsible for his low grades, but is this, the best way of helping him? And, if his grades are adjusted, is it fair to the other students? These problems can be quite a hazard to the mental health of the teacher who may feel he has to choose between being disloyal to the child and killing whatever chance he may have had of helping him—especially when he is convinced that reporting the low grade will have nothing but detrimental effects on all concerned—or betraying his trust as a teacher and sacrificing his integrity The fact that the teacher has a basic need to be loved and that he is likely to resent the hostility and hurt feelings of students to whom he gives low grades only serves to increase the severity of the conflict with which he is faced

Worthy of consideration as a partial solution to this problem faced by the teacher when assigning grades, is the procedure of having the students evaluate their own performance and their own progress This represents nothing more than the logical outgrowth of the view that teachers and pupils should work together in selecting worthwhile goals, in planning toward their attainment, and, finally, in evaluating the relative success with which these objectives have been achieved as a pre-

requisite for the selection and attainment of more advanced goals From a psychological point of view, such self-evaluations have considerable merit not only do they provide for effective learning inasmuch as the child becomes involved in the whole process of learning, but they also provide him with an important lesson in self understanding and in realistic goal-setting And since it is no longer a matter of the teacher sitting in judgment over the child, he has no basis for resentment and hostility evaluation is then an integral part of the teaching-learning process involving the same cooperation between teacher and pupil as do its other aspects

The matter of the validity of these self-evaluations is, of course, an important consideration Research [366, 375, 398] has shown that girls tend to overestimate and boys to underestimate their performance and that the tendency to overestimate one's performance is inversely correlated with the scholarship of the student On the other hand, research [62] has also shown that, when the A, B, C, D, F system is used, from 50 to 80 percent of the students give themselves the same grade as their instructor does—with the majority of the remainder (which comprises a heavy concentration of the duller students) giving themselves better grades

This is probably to be expected Teachers should realize that ego-involvement, which is almost certain to exist, is likely to cause some distortion in self-evaluation and each person is likely to have a systematic tendency to overestimate or underestimate his performance—simply because he is the person he is However, since helping him arrive at a realistic understanding of himself is an important responsibility of the school, self-evaluation may serve a useful purpose even though some children may need help in arriving at a valid appraisal And, of course, the child is more likely to profit from such self-evaluation if the classroom atmosphere is one of permissiveness and acceptance so that he can incorporate these new insights of himself into his self-concept without threat

CONVERTING PERFORMANCE INTO GRADES

The form in which grades are given is not of major importance Nevertheless, in view of the strong convictions sometimes encountered relative to the percentage method, or grading on the curve, a word of discussion might be in order We know whether or not performance is creditable only by comparing it to that of other persons This is particularly true in displaced cardinal series which can tell us only that one performance is better or worse than another, where the only interpretation that can be given to a score is in terms of its relative standing in the distribution of scores of the group Even in absolute cardinal series, such as that measuring typing speed, we know that eighty words per minute

is good only because we know that few typists type at that rate To illustrate the point How would you rate on a scale ranging from *outstanding* to *poor* the performance of a college athlete who pole-vaulted 11 feet, 8 inches, or of the one-year-old colt that is said to have galloped the mile in 2 minutes, 10 seconds?

When it comes to converting a student's performance into a grade, the matter has to be arbitrary, and preconceived limits such as 93–100 = A, 85–92 = B are essentially ridiculous as we have pointed out on page 386 Thus, a raw score of 60 out of 100 questions in history might represent outstanding or disgraceful performance depending on such factors as the difficulty of the test and the severity of grading The only reason why the percentage method works at all is that the teacher can set the severity of the scoring in inverse proportion to the difficulty of the questions, so that the right percentage of students get A's, B's, C's Years ago, it took only 50 percent to pass a course, then the minimum passing mark was raised to 60 percent, and then to 70 percent but the same number of A's, B s, C s is given now as there was before Teachers simply make whatever adjustment is necessary in order to have the proper (desired) percentage of students in each grade interval On an essay-test, the answer to a given question by objective standards might not be worth more than perhaps 13 out of the 20-point maximum assigned to the question but the teacher, realizing that no one can be perfect and that this is the best answer he is likely to get, scores it 18 or 19—because otherwise no one would get 93 percent of maximum, i e , no one would get an A In objective tests, the teacher emphasizes facts and limited objectives which have been drilled over and over and which the students have memorized, e g , "List three types of sedimentary rocks," 'Who was president before Truman?' And so, examinations stifle education Authorities on the subject of objective-type tests are unanimous in recommending that the average difficulty of the items be set at approximately 50 percent of maximum so that all students—good, mediocre, and poor—have room in which to demonstrate their knowledge or lack of it without interference from a ceiling or a floor Under these conditions, no one is likely to get a 93 percent and the highest grade in the class, if one were to hold rigidly to a percentage scale, might be no more than 80 percent or a C

Grading on the curve follows directly the discussion of the previous pages Whenever grading is based on a 'displaced cardinal series, there can be no grading other than grading on the curve—although not necessarily grading on the normal curve Grading on the curve is based on the readily acceptable proposition that, if education is to be a matter

of helping students make the most of their ability, then it follows that the distribution of performance on an appropriate evaluative device must approximate the distribution of ability among the group's members Of course, in practice, a student with little ability sometimes outscores students more capable than he is but then, some student with greater ability does not do as well as he should so that the general shape of the curve should remain relatively unchanged

In an unselected group, the distribution of the factors involved in learning, such as intelligence and motivation, tend to follow the normal curve and it seems logical, therefore, to expect the distribution of performance also to be normal Empirical evidence gives support to this view when the average difficulty of the items of a test is set at 50 percent of maximum, the resulting distribution of raw scores on the test follows the normal curve rather closely

From this distribution of performance, the teacher has to select cutting scores so as to derive letter grades This process is entirely—and unavoidably—arbitrary Thus, some writers suggest *as a rough guide* for dealing with unselected groups, the percentages of A's, B's, shown in the curve (Fig 14 6) It must be emphasized that grading on the
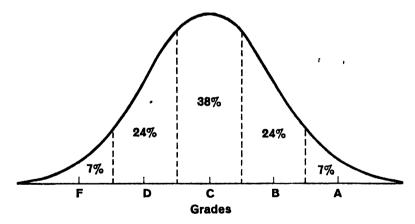
FIG 14 6 *Theoretical distribution of grades for an unselected group*

curve does not imply that a set percentage of the students in class must fail or that there must be no more or no less than 7 percent of A's Depending on its philosophy, a school might want to set other percentages as points of departure for guiding its teachers in their grading and, certainly, a teacher need not give a single *F* unless he feels that some student's performance is so much below acceptable levels as to deserve being labeled unsatisfactory—whatever the basis used in establishing

unsatisfactoriness It also follows that with the proportionally greater degree of academic mortality among the less-able students, say in the sophomore, junior, and senior year in college, the distribution of ability gets weighted more heavily toward high-ability levels and the distribution of grades ought to be weighted correspondingly toward a greater concentration of A's and B's It must also be noted that there is nothing in the concept of grading on the curve that says a teacher cannot make an adjustment in the grade of a student whose performance is below the class average but, nevertheless, in line with his limited ability

The point is sometimes made that, in view of the undependability of marks, we ought to use nothing but S for Satisfactory and U for Unsatisfactory Actually, such a scheme solves nothing and, if grades are expected to give pupils and their parents an idea of how well the former are doing, it is completely ineffective When accompanied by a more complete evaluation in terms of verbal or written comments, such a system may be a way of minimizing the emphasis sometimes placed on grades, but from a tests and measurements point of view, it is a step in the wrong direction Admittedly, marks are subject to error but lumping all the A's, B's C's and D's into a single category magnifies the distinction between the D's and F's, which distinction is still subject to the same error as before As a result, teachers using the S–U system generally give everyone an S which is the equivalent of grading no one From the standpoint of reporting to students and parents, the present letter grade system conveys very little meaning but the S–U system, by itself, is almost completely devoid of meaning If teachers want to report grades to students and their parents only in cases of unsatisfactory progress, it would be easier to say it that way

Reporting to Parents

The report card exists primarily for the purpose of keeping the parent informed of the progress of his child, of enlisting home-school cooperation and of improving public relations The report card in common use in most of our schools is essentially ineffective in all three counts and Kingsley and Garry [212] make the categorical statement that, for all practical purposes, grades and report cards could be dispensed with without serious loss Certainly, a letter grade in the various subject-matter areas and even a comment or two on the child's social and emotional development hardly give an adequate picture of his status or growth

Likewise, low grades and negative comments are more likely to arouse resentment and hostility on the part of parents than cooperation, and such remarks as "lazy" only force the child and his parents to wall themselves off in the face of attack The child is likely to resent being tattled upon and to view teacher-parent cooperation as nothing more than a conspiracy against him, especially when, at the very time he needs his parents' understanding most in order to accept and to profit from his past errors, he is deprived of their support as a result of the report card Likewise, parents do not appreciate being told bad things about their children for it reflects upon them No wonder that Crow and Crow [80] express the opinion that some report cards sent home to parents have done more than anything else to bring about misunderstanding between parents and teachers, parents and their children, and teachers and their pupils An equally strong stand against some of the present reporting practices is taken by Redl and Wattenberg [302] in the following statement

> To thoughtful adults, the glee of those pupils who "did well" is more than balanced by scenes in less fortunate homes Here, a "cooperative' parent administers a beating, cuts an allowance, or indulges in a third-degree interrogation There to avoid a scene, a parent's signature is forged Elsewhere ambitions crumble amidst sorrows or vows of vengeance
>
> That a ritual so fraught with nasty feelings for so many people should endure is a puzzle for sociologists to study Mental hygienists have dutifully registered their disapproval for decades

It all adds up to the fact that teachers had better wake up to the potentially harmful nature of the report card lest they, unwittingly, allow it to sabotage their other efforts on behalf of the child

The form letter, as used in some school systems, has the commendable feature of giving the teacher greater freedom in expressing the ideas he wants to convey to parents Nevertheless, it is not without drawbacks First, it is time consuming and, secondly, the teacher may have difficulty in writing such a letter without antagonizing parents, especially because it does not give the teacher sufficient opportunity to lay the groundwork for adverse comments to be accepted through allowing him to dwell on strengths before going on to weaknesses

The feeling on the part of teachers that better relations and better cooperation between teachers and parents can be fostered through person-to-person contacts has led to the adoption in many school systems of the conference as a partial or complete substitute for the report card Just as

in the case of the form letter, the conference has some drawbacks, among which can be mentioned the following [a] It is time consuming [b] Some teachers are not as effective in meeting with parents as they should be [c] Parents who have outside employment sometimes resent having to come to the school for a conference, especially since some have been conditioned to expect to talk to the teacher only when their child is in trouble It has special limitations in the departmentalized high school where the parents would have to see some five or six teachers, some of whom can hardly identify their child, let alone discuss his problems [18] Nevertheless, the conference has much to be said in its favor if teachers and parents, rather than exchanging hypocritical niceties, will discuss objectively mutual problems as they relate to the pupil's growth, emphasizing not the problems themselves but their probable causation and the steps to be taken in alleviating them The conference also provides the opportunity for the teacher to discuss with the parents the more personal and confidential matters concerning the student, such as the fact that he is of limited ability or that he is relatively immature, matters which he could not handle via the report card, since potentially damaging information about the student should never be written on a semipublic document and since the report card does not permit the teacher to build up the background necessary for parents to accept the information

Another recent trend in reporting is that of self-reports by the pupil to his parents This is a logical sequel to the self-evaluation discussed in the previous pages once the student's evaluation of his work—under the direction of the teacher—has reached the point of mutual agreement, it is sent home under their joint signatures in lieu of or as a supplement to the more formal report card The teacher should, of course, provide some guidance if the report is to go into meaningful directions and if it is to be objective and sufficiently detailed, but, when well done, such a procedure can embody the best in pupil-parent-teacher cooperation

HIGHLIGHTS OF THE CHAPTER

The importance of a pupil-appraisal program is obvious in view of the school's acceptance of responsibility for the child's all-round growth

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[18] Parent-teacher conferences are more practical in the grade school In view of the half-dozen teachers the parent would have to see, it seems likely the report card will continue as the basic means of reporting to parents of high school students It should, at least, be improved

and development Some of these aspects are of such technical nature as to belong more appropriately in a text in educational tests and measurements or in guidance This chapter is concerned with the appraisal of his academic progress with the following being among the more important aspects considered

[a] Measurement and evaluation are integral aspects of the total teaching-learning process giving both the student and his teacher information on the basis of which the former's further growth can be planned and guided more effectively

[b] Sound evaluation begins with sound measurement derived on the basis of a number of valid and reliable instruments, but it goes beyond measurement in that it appraises the results of measurement in the light of the goals of education, the objectives of the course, and the particular circumstances involved

[c] An instrument is valid when it is relatively free from factors which are extraneous from the standpoint of the objectives of the course in which achievement is being measured The specific nature of these objectives depends on the philosophy of the school and the function the course is to serve in the student's education

[d] A test should be reliable and teachers should be cautious when evaluating the results of a short test The essay examination is notoriously low in reliability

[e] Tests can be standardized or informal, and objective or subjective Similarly, objective test items can be of various types None is better than any other each is most valid under certain circumstances and it is a matter of choosing the right type of test and of test item for a specific purpose

[f] Most educational measurements are based on a displaced cardinal series Consequently, the results can be interpreted only on a relative basis and raw scores and percentages are relatively meaningless until converted into derived scores expressing the individual's status in relation to that of others

[g] Grading is a matter of synthesizing the evaluation of the various aspects of the student's performance into a single symbol The process is obviously arbitrary and any attempt to have the test give the grade directly, as is implied in the system of 93 to 100 percent = A, etc, is misguided The primary point of reference available to the teacher in his assignment of grades is the performance of other members of the class (or of previous classes), and grading, on the curve is essentially unavoidable   .

[h] Many relatively valid criticisms have been aimed at grading—or at least at the abuse of grading—and the teacher needs to be cognizant of the fact that grading can easily negate many of the more important things he is trying to do

[i] Reporting to parents can also be harmful if improperly done and, whereas no one method has been found perfect, parent-teacher conferences and self-reports by students are among the more modern and psychologically-sound approaches to the problem

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QUESTIONS AND PROJECTS .

1 Write up the objectives for a college course you are now taking Be sure these are stated in terms of measurable changes in student behavior Give a few sample questions to show how progress toward these objectives can be measured

2 What type of evaluation would you consider best for a course in educational psychology? What type of examination might be given? What

criteria would you recommend as the basis for grading? Plan a whole evaluative program for such a course

3 How do you account for the continued existence of the 93–100 = A system despite its illogicality?

4 How can teachers minimize the degree of emotional upset often associated with the taking of examinations?

5 What might be the arguments pro and con with regard to a state-wide (or system-wide) testing program?

6 What improvement might realistically be expected in the report card at the high school level?

15

Individual Differences

EDUCATORS ARE GETTING MORE and more to recognize that the dedication of our American democracy to the philosophy of equal educational opportunity does not mean the *same* education for all On the other hand, trying to be all things to all children in the face of the marked differences that exist among them has complicated the task of the school to the point that it has not been particularly effective in dealing with a sizable portion of its population Some administrators have become reconciled to the view that, no matter how hard one tries only so much can be done and that inevitably someone will suffer, others, spurred by pressures and criticisms from the public as well as complaints from classroom teachers, have tried various innovations with varying degrees of success Common among the latter are the special programs for exceptional children what needs to be recognized is that everyone is in a sense, exceptional and in need of a special program for, as many classroom teachers will testify,

there is no typical child for whom a standard program can be fitted without alterations.

Range of Individual Differences

The fact that individuals differ from one another is fully accepted even by the layman The extent to which people differ is, however, seldom appreciated Differences in height, weight, complexion, and other physical characteristics are obvious to all, but not quite so fully realized are the differences among people with respect to such psychological traits as intelligence, social and emotional adjustment, interests, special aptitudes, and general readiness for a given activity This discussion will be oriented toward differences as they apply to the learning of academic material but, in this, it will be doing violence to the psychological concept of the total personality It should be remembered that the child is unique and that two children even with the same IQ are not intellectual equals for the child is more than the summation of his characteristics Thus when for the sake of analysis and discussion, reference is made to gifted children no implication is made beyond their relative similarity with respect to intellectual ability, for even within such a group tremendous differences exist

To appreciate the range of individual differences to be found in the classroom, one might first consider the implications of the range of IQ noted in Chapter 7 If we, for instance, consider children of CA = 12

CA = 12	CA = 12	CA = 12
IQ = 68	IQ = 100	IQ = 132
MA = 8	MA = 12	MA = 16
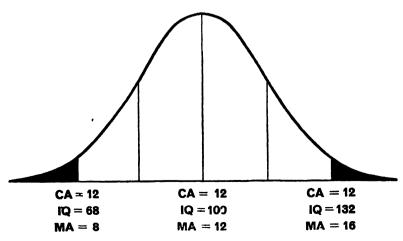
Fig 15 1 *Range of individual differences*

and for the sake of simplicity of discussion ignore the top 2 percent and the bottom 2 percent of the distribution, we will find the MA of the remainder, as determined by the Revised Stanford-Binet, to range from an MA $= 8$ to an MA $= 16$ Thus, there are children in the average grade six class who are capable of working at the tenth grade level while others are fully challenged by the work of grade two This range of ability would be found in any subject area, whether it involves vocabulary, reading ability, arithmetic, or social studies And this is not to mention the 2 percent at the top of the distribution or at the bottom

There is a great deal of overlapping from grade to grade [a] As shown in the accompanying figure, IQ data suggest that one-sixth of the
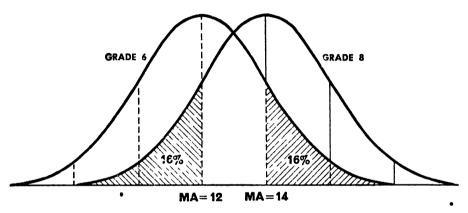
FIG 15 2 *Degree of overlapping in ability between grades 6 and 8*

sixth graders are above the median for grade eight in ability and, conversely, one-sixth of the eighth graders are below the median for grade six (There is a one-third overlapping between consecutive grades), [b] The upper 10 percent of high school seniors are more competent than the median college senior and, conversely, the lower 10 percent of college seniors would fall below the median of high school seniors—and this would be true of any subject area—although with different comparisons, different students would be included in that 10 percent, i e , a given high school senior, for example, might surpass the college median in reading but not in mathematics

In the Learned and Wood study [232] it was found that if graduation from college had been on the basis of accumulated knowledge rather than on the basis of accumulated credits, the graduation class would have consisted of 28 percent of the seniors, 21 percent of the juniors, 19 percent of the sophomores, and 15 percent of the freshmen The average score

of the class that would have graduated, had graduation been based on the comprehensive tests given, would have fallen at the 84th percentile of the class that did graduate and the average chronological age would have been two years lower

Many other examples could be given, including the fact that there are high schools and colleges in the United States where the dullest pupil is a mental giant by comparison with the brightest student of some other high school or college Suffice it to say that individual differences are real and they are large The more important question is what to do about it

Our schools are not too well organized to deal with such differences, children start grade one at the same age, move one grade per year, use the same textbook, follow the same curriculum, do the same assignments, and face the same standards—all much after the pattern of an industrial assembly line Despite all that is known about individual differences, many teachers still operate on the assumption that grade levels mean definite stages of educational achievement and that all children have the required readiness and that they can do the work "if they'll only apply themselves" or they use the other version that, with the large classes they have, there is nothing that the teacher can do about children who "can't" or "won't" learn! Both views are equally bad frustration, maladjustment, misbehavior, and drop-out are among the usual outcomes of such pedagogical malpractice

Dealing with Individual Differences

A number of schemes have been advanced to deal with the situation and, although none has been a complete solution to the problems of the classroom teacher faced with thirty or more children combining all the permutations and combinations of differences possible, it is profitable to consider at least the major plans Generally, these proposals fall in the category of promotion, instruction, and grouping with, of course, the various combinations of these

PROMOTIONAL POLICIES

The oldest attempt at dealing with individual differences in the classroom revolved around what might be called rigid standards of grade placement Thus, a child was retained in a given grade until he had mastered the material of that grade and, conversely, he could get a double promotion if it was felt that he had already mastered enough of the

content of the grade immediately following that which he had just completed

Acceleration was particularly prevalent in the old ungraded school where a gifted child could go through the first eight grades in perhaps four or five years In fact, repeated double promotions could result in college graduation perhaps as early as age fifteen It has been frowned upon in recent years on the argument that it overemphasizes the intellectual at the expense of the other phases of the child's all-round development as stressed by modern educators and that the accelerated child may become a misfit from the standpoint of physical, social, and emotional adjustment

At the other end of the continuum are those whose work is below par and who, according to the older view on the subject, needed to be retained lest they get hopelessly bogged down with the more advanced work to come and slow down the progress of students in the next grade Before we proceed to a discussion of the validity of this position, let us consider the question "Why fail students?" Whereas the specific answer to that question varies from case to case, the general policy of failure "where warranted' is considered by the advocates of rigid standards to serve three important functions

[a] To *motivate* students who apparently will put in an effort only when the threat of failure is kept constantly before them This, as we have seen [288], is not true—and fortunately so, for it would be a sad commentary on the appropriateness of our curriculum and our methods if it were! Failure is a last ditch attempt at motivation and it ought to be possible for the few teachers who still rely heavily on fear of failure as a motivational device to use more positive measures

[b] To maintain standards Some people feel, for instance, that the high school is losing its academic reputation by graduating students who have been carried along for years and parent and community groups have, in some cases, demanded a return to the "good old standards" where one did not graduate without a certain amount of knowledge They overlook the fact that the solution in those days consisted of simply forcing the student to drop out, sometimes long before he got to high school

[c] To reduce the variability within the classroom It is argued that the child who fails to master the work of the grade ought to be retained since by the next year, his increased mental development and the general overview of the work of the grade which he has had will make it possible for him to do well as he repeats the grade This has not been realized in practice As early as 1911, Keyes [208] showed that repeaters do worse, rather than better, than they did the first time Cook [76] and Klene and

Branson [217] likewise showed that potential repeaters profited more from being promoted to the next grade than from being retained Thus, Cook compared schools having rigid standards as represented by an average retardation of nearly two years in grade seven, with a matched sample of schools having liberal promotion policies with a corresponding average retardation of only 17 of a year and found a significant difference in achievement favoring the schools with lenient promotional policy— but he found no difference in the range of individual difference in the two sets of schools Likewise, Coefield and Blommers [64] found that children who reached grade seven in eight years (due to failing) knew no more than did children who had reached grade seven in seven years Evidently, the standards of a school cannot be raised by accumulating the dullards any more than the standards of a ball team can be raised by keeping the unfit Of course, in school, emphasis must be on the individual child but, if our concern *has* to be for the standards of the school, let us, at least, be logical and *eliminate,* not *retard*

Also to be considered, especially in view of the modern emphasis on the total child, are the effects of the child's retention on his personality Although the evidence is not entirely conclusive, the consensus relative to such effects would be in agreement with the statement by Goodlad [150] that "throughout the body of evidence runs a consistent pattern Undesirable growth characteristics and unsatisfactory school progress are more closely associated with nonpromoted children than with promoted slow-learning children" In view of his need to maintain a consistent self-image, the child who is retained is likely to conceive of himself as dumb, tough, or unconcerned as many teachers who have repeaters in their classes can attest These children, having been separated from the group in which they belong and often being out of step physically, socially, and emotionally with the new group, generally find it difficult to get accepted and often react to the whole situation by becoming discouraged, mischievous, and hostile

Evidence points to the fact that retention is not effective in reducing the range of individual differences and that it tends to have negative effects on the academic achievement and personality of the child It does not follow, however, that retention should be completely eliminated from our schools no doubt, there are times when a child who is retarded physically, socially, and emotionally as well as mentally, can profit from being put into a somewhat younger age group, each case should be evaluated on its own merits The decision to promote or to retain should be made only after consideration of all the factors—not just the academic —and generally the teacher, should show cause why the child should

be retained in terms of how he can be helped more by retention than by promotion The important thing is not to promote or to retain but rather what the teacher does after having made this decision, for the element of failure is not eliminated simply by having universal promotion Unless the teacher is prepared to take the child at his level— as he has to do with all the other children in the class—and make what-ever adjustment and adaptation of the instructional methods and materials (e g, individualized instruction, subgrouping, and remedial work) necessary to bring the material down to his level, the child had better be retained, for otherwise classwork will become progressively more baffling to him If he has to be frustrated, it is hard to tell whether it is more devastating to be frustrated once a year or continually throughout each day of the year

Retention should not be thought of as a form of punishment but rather as a matter of optimal grade placement for maximum growth At all times, the instructional needs of the child should take precedence over the convenience of the teacher and if, by special help and remedial procedures he can be kept in with his group without taking too much of the teacher's time and energy away from the other children, he should be promoted When the decision is reached that he should be retained he should be prepared for the decision It is most important, for instance that he be convinced that those who made the decision had his welfare at heart It is also most important that the parents be in on the decision for their reaction, if unfavorable, might well make an otherwise wise decision to retain unwise

To avoid the objections to complete failure, various compromises have been worked out including partial failures (failure for one semester, or in one or two subjects only), conditional failures where the child is given the option of attending summer school, as well as such programs as the Winnetka the Dalton, and the Morrison plans Another proposal which seems to have some merit is that of having fewer promotion periods the Milwaukee public schools, for instance, have a primary block, consisting of six semesters which can be shortened or extended up to eight semesters before the child moves into grade four There is no passing or failing the child simply covers the material of the first three grades at his own speed The effectiveness of these solutions varies from case to case but none can be considered a cure-all

INSTRUCTIONAL PROCEDURES
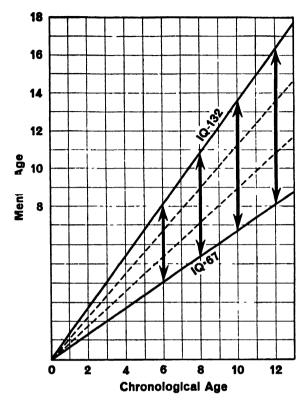
Teachers in the classroom are in a difficult strategical position in that they have to get children of widely different ability and background up

to satisfactory standards by the end of the year In other words, they have to extract similar performances out of children who are far from being similar And they manage to do just that through the simple expedient of limiting their objectives Thus, in spelling, the teacher announces that all the words the children need to know for the examination are the words in certain lists In history, the material to be mastered in order to pass the course is found in Chapters 1 through —— of the prescribed text, and so on Thus, whether it is the one hundred additional facts or the work of grade nine algebra, it makes no difference if the bright child knows it all at the beginning of the year, he can sit and be bored while the teacher prods and pushes the dull past the finish line before the end of the year For the same reason, teachers sometimes emphasize facts and other aspects of the course that can be memorized, since this is an area in which the dull, if they try hard enough, can achieve relatively well—at least, relatively better than they can in the area of reasoning, of dealing with applications and implications, and of the other higher mental processes And so, at the end of the year, the class tends to put on a seemingly homogeneous performance

Putting a ceiling on what students in a given course have to cover, besides stifling originality and initiative, takes all the joy out of classwork It may also account for the fact that the correlation between intelligence and achievement is as low as it is and the fact that children may lose up to a half of their so-called education in the brief months of summer vacation Apparently, somebody is forgetting that "equal educational opportunity" implies that the only ceiling which should be imposed on education should be imposed by limitations in ability

However, as for reducing individual differences—when the goals are unlimited and related to the higher mental processes, instruction will increase, not reduce, individual differences, it is only when the goals are restricted that instruction will reduce the variability If education is to be a matter of opportunity to profit from instruction in accordance with one's ability, status after training must diverge in the same way as the IQ lines for various ability levels shown in the accompanying chart diverge, and the greater the quantity and the effectiveness of instruction, the further apart in achievement students of different ability will be And this is precisely what happens when the goals of education are measured in terms of vocabulary, of getting meaning out of a paragraph, of solving a problem in mathematics, of organizing ideas, of using effective English, and other phases of education that really matter, for this is the type of material found in intelligence tests Unfortunately, these are the things which teachers often neglect

Fig 15 3 *Increase in intellectual differences with age*

ABILITY GROUPING

A solution to the heterogeneity of ability in the classroom that keeps coming back and which finds many suppoiters is that of ability grouping (or homogeneous giouping, as it is sometimes called) [1] This method is not new it is essentially what schools did years ago when they passed only the competent student—they simply forced those of lesser ability to drop out of school which saved them the inconvenience of providing separate classes Actually because of the wider range of ability enrolled in school today, ability grouping as a means of saving the dull from frustration and the bright from boredom may be more necessary than ever before

Before we consider the relative merits of ability grouping, it is necessary to understand that, in addition to the differences that exist from

[1] Homogeneity simply refers to alikeness in some respect and we already have students grouped homogeneously with respect to such criteria as chronological age, academic background, and even sex (c g, in physical education) When the basis for grouping is ability, however defined, the use of the term *ability grouping* is preferred

person to person in a given ability, there are differences among the various abilities within a given individual The first type of difference is generally referred to as *interindividual differences* (differences between individuals) or, more simply, as individual differences while the terms *intraindividual differences* or *trait variability* are generally applied to the differences within the individual Ability grouping on the basis of a general IQ score assumes that there is a high degree of correlation among the various abilities in a given person, in fact, if students were to be of uniform ability in all areas, ability groups could be established, and a standard curriculum along with standard procedures (gauged for different levels of all subject-matter areas) could be devised and used as a reasonably adequate solution to the problem

But research evidence does not bear out the assumption that trait variability is of negligible proportions It is true that correlation, not compensation, is the rule as far as the presence of desirable—or undesirable—characteristics within a given person are concerned [*] gifted children, e g , Terman's one thousand gifted have been found to be, on the average, superior to the general population with respect to physical, emotional, and social as well as intellectual development But the correlation is very low Hull [188], as a result of a study in which thirty-five tests of different abilities were administered to over one hundred students, estimated trait variability to be approximately 80 percent as large as individual differences and it is generally agreed that grouping say high school students into a high and low ability group on the basis of general ability, will reduce by some 20 percent only the overlapping normally found between the two groups in specific subject areas when students are assigned to groups at random

Thus, general ability grouping is only partially successful as a means of reducing the range of individual differences in the classroom Actually, it is somewhat more effective in grade school than in high school and college, for there is evidence to show that trait variability increases with age Thus, a youngster with considerable ability in all subjects is more likely to be found in lower-grade school than in the upper grades besides the relative lack of specificity in his abilities, the curriculum at that level is more homogeneous Some people show somewhat less variability in their traits than others but, as we have seen in Chapter 3, the person who is tops in every ability is the exception rather than the rule and,

[*] To the extent that the correlations among some of the abilities displayed by man come close to zero, it would be most improbable for a person to be superior in, say, ten different abilities It would be possible to be an honor student in a variety of academic subject areas because of the somewhat common denominator of intelligence, study habits, etc , but this would be less likely if such areas as art, music, sports, and shop were to be included

whereas some students get *A*'s in all subjects, it does not mean that they put in the same time and effort on each Therefore, if ability grouping is to be successful in high school and college, the grouping has to be on the basis of, not over-all IQ, but rather on the basis of whatever special aptitudes are involved in the various courses Thus, a high-school student whose verbal aptitude is high might be placed in a superior class in English and history but perhaps in an average class in algebra if his numerical aptitude should turn out to be less impressive

Ability grouping on the basis of general IQ in the grade school and on the basis of relevant abilities in high school can effect some reduction in the range of individual differences to be found within a given classroom and some school systems are successfully grouping their students On the other hand, many arguments against such a plan have been advanced, the following being among the more common

[a] Grouping on the basis of mental ability overemphasizes the intellectual and ignores equally important aspects of the child's all-round growth It is argued that it tends to disregard, for example, the role played in learning by such factors as motivation, and that it may cause the child to encounter difficulties in the area of social and emotional development as a result of insufficient contact with children of lesser or greater ability The term *undemocratic* is sometimes thrown in to befog the issue with an emotional overtone [3] In order to meet this criticism, some schools are using a partial segregation plan in which the gifted are grouped homogeneously for half a day and returned to their regular classroom for the other half-day

[b] Grouping on the basis of mental ability is likely to give some students a feeling of superiority and others a feeling of inferiority This argument tends to overlook the fact that the gifted child could also feel superior as a result of his being the cock of the roost in an ungrouped class, and that we have already accepted ability grouping for the retarded child

[c] Grouping does not result in sufficient homogeneity in ability to do classwork to warrant the effort and difficulties involved, especially since, in a small school, there may not be enough students from whom to choose so as to effect any degree of homogeneity in the subgroups And, even when children are grouped according to ability, teachers still have to take care of individual differences in the classroom This last point is well taken and probably constitutes the strongest argument against ability grouping The ideal is to place each child in the educational setting that will give him the best opportunity to achieve an optimal well-rounded growth, but

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[3] No one seems to raise any objection to the undemocratic nature of the classes for the slow learner

one must not assume that ability grouping is the only way of dealing with children at their level A competent teacher can make provision for differences among individual pupils whether or not his class is grouped according to ability, it is not uncommon to have students in the primary grades, for instance, sectioned into three ability levels for a particular activity and reshuffled among the groups for a different activity Such subgrouping can be particularly effective in that it takes maximum advantage of the benefits of individual participation and of social reinforcement while maintaining the whole-group feeling Of course, subgrouping entails certain difficulties but none is insurmountable Anyone who has had experience in ungraded rural schools would feel little sympathy for the teacher who is incapable of providing each child in his classes with five days of learning experiences per week simply because his students do not happen to be of a single-ability level in all subject-matter areas The teacher who complains that he does not have time to provide special help and to individualize the work of the classroom needs to realize that he must find the time to do it Unless he does, some children will get progressively more lost and soon will become problems whereas a little attention in time will save trouble later After all, the number of deviates who require special attention is generally sufficiently small that it should pose no impossible task to a teacher willing to use a little ingenuity

Thus, ability grouping is not an end in itself it is a means which some schools consider advisable for facilitating the teacher's task of dealing with children of widely different ability When ability grouping is used in a school, the word *ability* should be interpreted in a broad sense and made to include such factors as IQ, special aptitudes, past scholarship, motivation, perseverance, social competence, and general maturity [4] Hence, the admission of students to the various classes should involve an evaluation of each case on its own merits It should also be emphasized that ability grouping implies a differentiated curriculum fitted to the abilities and needs of the group and of the individual students in the group to try to present the same material at a slower or faster pace just will not work.

The Gifted Child

The advent of Sputnik once again focused attention on the gifted child who alternately becomes our most valued natural resource and

[4] Perhaps the term *readiness,* as introduced in Chapter 3, would be a more suitable term than *ability*

the forgotten student Because he is able to take care of himself academically, he gets less attention from the teacher and because he can get by without effort, he is not encouraged to make use of his talents to the extent the duller child does Hollingworth [179] estimates that children with IQ's of 140 and better waste half their time in the usual classroom and those of 170 and better waste practically all their time This is in general agreement with the opinion expressed by Terman and Oden [380] that more than half of the children of IQ's of 135 or above have already mastered the school curriculum to a point two full grades beyond the one in which they are enrolled and some of them as much as three or four grades beyond Some educators and laymen are convinced that, whereas we have accepted the idea of special provisions for the dull we still discriminate against the bright, boring them, and causing them to seek outside of school (and often in antisocial ways) the feeling of achievement and self-esteem we deny them in school Many display signs of apathy, boredom, unhappiness, and even maladjustment In fact, many do not even go to college

Generally speaking, the teacher in the average classroom cannot take care of the gifted along with the average and the dull children As a result, the gifted are simply neglected Often their intelligence is not even recognized, partly because many conceal their true ability so as not to appear different Therefore, instead of being encouraged to develop their potentialities and to make a contribution in keeping with their superior ability, they are often forced into habits of indifference, carelessness, and indolence by being made to adjust their pace to that of the class

When the question of doing something for the gifted child is raised the solutions mentioned are generally along one of three lines acceleration, adaptation or enrichment, and grouping All three have their merits and their limitations and the most desirable procedure to use would depend on the particular situation involved It must be emphasized that intellectual superiority is a matter of degree and that it is, therefore, impossible to devise a standard program that will take care of the needs of the gifted for, just as their more average counterparts, gifted children display individual differences in all areas, including the intellectual The only saving feature from the standpoint of the teacher is that they possess a great deal of ingenuity and initiative (when it has not been beaten out of them) so that, in contrast to the duller children who often hang onto the teacher's neck like millstones, the bright can make their own adaptations of the curriculum when allowed a certain amount of freedom

Acceleration has definite possibilities for the gifted Allowing them to go through the second and third grades in a single year, or allowing them to enter grade one a little earlier may be desirable in many cases, especially since some of these children are superior in other aspects of growth as well as the mental and would, therefore, fit in well with a group older than themselves This will permit them to reach college one or two years earlier and the head start may be to their advantage in view of the fact that getting established in a profession, such as medicine, is a slow process This procedure is recommended by no less an authority than Terman [378] and rather well supported by research showing that, generally, students who skip a grade are apparently none the worse for it Nevertheless, where acceleration is used, it would seem better to have accelerated classes which may for instance, complete the work of junior high school in two years instead of three, rather than permit students to skip a grade

Ability grouping has already been discussed It has definite possibilities as a means of dealing with gifted children and many school systems have successfully implemented a program of this sort Not only does experimental evidence [265] tend to favor ability grouping from the standpoint of academic progress but such grouping is also endorsed by the gifted themselves [145]

The general consensus is that, while experimental data are not entirely conclusive, the evidence in favor of special classes in the words of Norris and Noonan [282], 'indicates certain advantages and minimizes the claimed disadvantages " Of course, grouping is not in itself sufficient its effectiveness depends on what adaptations of standards materials, and methods are made to provide the gifted child with experiences at his level and the extent to which this is done may be a factor involved in the conflicting evidence as to the relative superiority of grouping over nongrouping Partial grouping may be a satisfactory compromise in view of the arguments for and against complete separation of the gifted

Enrichment or adaptation of the material to the ability level of the child is a must whether or not the child is accelerated, for the gifted child could not be accelerated enough without doing him harm from an emotional and social standpoint Enrichment can take place in special classes or in the regular classroom where the child is given freedom and encouragement to pursue the subject beyond the requirements for the other children in the class Unfortunately, while ideal in theory, enrichment as the sole means of dealing with the gifted is seldom adequate in practice Too much time is wasted by the gifted child doing the work other children are doing—in fact, often doing more of the same whereas

he should be doing less—and the teacher is often too busy working with the rest of the class to give the needed help and encouragement Some schools allow gifted children to use the study hall or library period to work on projects of their own, but they are entitled to more positive direction from the teacher if they are to make the most of their abilities Excusing them from routine work and allowing them to take an extra subject during the study hall period is generally to be recommended wherever it is feasible, but probably the best approach involves a combination of acceleration, enrichment, and segregation Most school systems of any size ought to be able to work out some arrangement along these lines

The Retarded Child

The slow learner also has special needs but his needs are generally much more obvious to the teacher than those of the gifted child so that, whereas the gifted is often neglected, the dull is constantly being prodded which, while it may lead him to greater use of his limited talents also may lead him to frustration and maladjustment The special provisions that need to be made for such a child depend, of course, on the situation It is generally agreed that for the children of IQ below 70 or so, special classes are preferable to attempts to deal with them in the regular class-room What such a child needs is special help and understanding and especially freedom from pressure and emotional distress resulting from emphasis on unrealistic demands Likewise, his curriculum, rather than involving coverage of the same material as the regular class but at a slower rate of speed needs to be oriented toward the concrete and the specific with a strong vocational bend It is also necessary that he be given practice in effective living under conditions that are pleasurable For children somewhat less retarded, ability grouping through guidance into special areas where the relative lack of intelligence will be less of a handicap is, of course, advisable but it must not be assumed that the child will be good in shop or that he will have a lot of drive in motor mechanics simply because he lacks what it takes from the standpoint of the academic curriculum

As pointed out in a previous chapter, Davis and Eells make a rather strong case for the slow learner from the lower socioeconomic classes They point out that such a child makes slow progress in school, not so much because of lack of mental ability but rather because of the un-

suitability of the middle-class oriented curricular diet served in our schools Regardless of the validity of their contention—and Shaw [330] found correlations ranging from 27 to 41 between measures of socio-economic status and academic achievement in various subjects—the fact that taking care of individual differences also implies orienting the curriculum toward the needs and purposes of the child must not be overlooked

Suggestions for Dealing with Individual Differences

None of the proposals we have discussed is capable in itself of taking care of the large range of individual differences found among students in the classroom Some of the proposals occasionally made to deal with the problem are relatively useless, others, such as ability group-ing, can be only partially effective Any administrative plan can facilitate the work of the classroom teacher but cannot solve the problem for, in any grade—whether with liberal or strict promotion whether with or without ability grouping—there will always be differences and, even if pupils were to be equated today, by tomorrow some would already have separated themselves from the rest In the final analysis, it is the teacher who is the key to any plan in dealing with individual differences, for it is he who has contact with the "customer"

Thus, we need teachers who are not only familiar with the principles of individual differences and their implications in terms of educational practice but who also are sensitive to individual needs and are sufficiently dedicated to their work to want to adjust curriculum and standards to the level of the child They also have to be possessed of ingenuity in vitalizing the curriculum and competence in the use of pupil-centered techniques which tend to have greater flexibility and which can be more easily adapted to differences in ability and background than the chapter approach a project in transportation or in sanitation, for instance, con-tains aspects that would challenge both the first grader and the college graduate It must also be remembered that if given a part in the selec-tion of the goals for which they are to strive and provided with a class-room atmosphere of understanding and encouragement, children can be depended upon to find their own level ·The teacher needs to accept in-dividual differences as both a challenge to his professional competence and a blessing what if everyone were equally adept at mathematics and

no one had any ability in the area of motor mechanics? He needs to know the resources of the class and to capitalize on these in connection with group projects as a means of building up group feeling and of giving the individual member a sense of worth and belonging through his contribution to the attainment of group goals

Getting acquainted with each and every child is obviously a prerequisite to dealing effectively with the problem of individual differences This involves the teacher having at his disposal various test scores, family data, developmental history data, and any other information that will help him understand the child as a unique individual Implied is the need for a thorough testing program and for mutual sharing of information with the home for the welfare of the child An up-to-date, concise, and convenient cumulative folder where this information is readily available is essential and a lightened teacher-load would certainly help It may also be advisable—although objections to such a plan can be raised—to have a rotation system that would permit the same teacher to remain with a given group more than one year Such a plan may help high-school teachers become acquainted with some of their students to a greater extent than they do now The core program in which a teacher in high school has the same students for two periods a day is a move in the same direction Lastly, there is need for a wide variety of course offerings and co-curricular activities together with an effective guidance program that will orient students into areas which are suitable in terms of their abilities, interests, and backgrounds

HIGHLIGHTS OF THE CHAPTER

It is a fundamental idea in American education that every child should be provided with an education in keeping with his abilities in order that he may attain maximum self-realization If teachers are to be successful in making this possible, they need to become familiar with some of the basic concepts of individual differences as they pertain to the work of the classroom The following are among the major points on the subject which have been discussed in this chapter

[a] People seldom appreciate the wide range of individual differences As an example of such differences, as they relate to the classroom, the top third of the students in a grade six class, for instance, have the mental development that would permit them to do above-average work

in grade seven while the lowest third would probably do below average work in grade five

[b] Our schools are not too well organized for dealing with individual differences Uniformity in age of entrance, in curriculum, in textbooks, and in promotion is, unfortunately, rather rigidly accepted as standard practice

[c] A number of schemes have been advocated for dealing with individual differences Of these, ability grouping appears to be among the most effective When used in high school and college, ability grouping has to be based on a consideration of special aptitude as well as past scholarship, general maturity, motivation, social competence, and other factors peculiar to the individual case

[d] It is difficult to deal effectively with the gifted child within the framework of the regular classroom and special provisions in terms of acceleration, enrichment, and special grouping are generally necessary Enrichment is essential regardless of what else is done

[e] The needs of the duller child in terms of special classes, special curriculum and special methods have been more fully appreciated

[f] None of the schemes discussed is, in itself, an adequate solution to the problem At best, these plans can only facilitate the work of the teacher in dealing with the wide range of individual differences in the classroom but it is the teacher who, in the final analysis, must make the adaptations of the classroom experiences to fit the ability level of the individual child

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QUESTIONS AND PROJECTS

1 Comment on the 'incompatibility" of providing for individual differences and maintaining academic standards

2 Evaluate Dull children should be allowed to leave school whenever teachers feel that they are accomplishing nothing for themselves and are interfering with the education of more capable students

3 Evaluate The old ungraded school offered the gifted and the dull child unlimited opportunities for adaptation of the curriculum to their level without social disruption

4 What are some of the procedures that make it feasible to have children progress according to their ability without, at the same time, getting involved in administrative confusion and such psychological complications as difficulty with social and emotional adjustment?

5 What specific adaptation of the curriculum and of teaching procedures can be made for children of the lower classes while keeping within the framework of the curriculum prescribed by school authorities?

16

Personal and Social Adjustment

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A teacher will never succeed in giving proper guidance to a child if he doesn't learn to understand the psychological world in which that individual child lives.

AMONG THE MORE SIGNIFICANT CHANGES which have taken place in the school during the last decades, probably none is of greater significance than the increased concern over the personal and social adjustment of the child From a rigid emphasis on academic learning very often at considerable cost in terms of his adjustment, schools have come to recognize the importance of the latter to the point of not only organizing rather elaborate guidance programs designed to promote the more personal and social aspects of his growth but also of making the regular classroom program much more guidance- and adjustment-oriented The primary responsibility for the child's adjustment lies with his parents who set the basic pattern of adjustment through the security they provide him, particularly in his early years The teacher's influence is only slightly less important, for it is he who, in the main, holds the key to whether the experiences the child undergoes in school throughout his formative period will lead to satisfaction and self-fulfillment,—or to frustration and self-defeat

The Nature of Adjustment

THE CONCEPT OF ADJUSTMENT

Throughout life, the individual has to adjust to the demands of his external environment as well as to those of his physiological and psychological make-up. Thus, the individual is continually eating, drinking, seeking affection or approval, trying to gain status. The adjustments he makes in response to these demands are not always the most desirable or wise from the standpoint of his long-term welfare but they are, nevertheless, adjustments in the sense that they are attempts to satisfy some of his needs. Only in death does the individual cease to adjust.

Adjustments may be defined as the process by means of which the individual attempts to maintain a level of physiological and psychological equilibrium, or more simply, adjustment refers to behavior directed toward tension reduction. Implied in this definition is a state of harmonious relationship existing between the individual and his environment so that adjustment is a matter of the interaction between the capacities of the individual and the demands of his environment. Thus adjustment is specific to a given individual under specific conditions and the term *adjusted* is meaningful only in terms of "adjusted to what?" It follows that adjustment is related to such factors as the particular culture in which one lives, the sex of the individual, his socioeconomic status, and other factors peculiar to him and to the environment to which he must adjust. Thus, a boy from a lower socioeconomic group who refuses to fight may be considered maladjusted by the standards of his social milieu whereas the boy of a higher socioeconomic group who does fight may also be considered maladjusted by the standards of his social group.

Adjustment is only relative and temporary. It is impossible for the individual to become *adjusted* for no matter how contented he may be over the fine meal he has just had, he can be out of harmony with his environment in a matter of hours if his next meal is not forthcoming. Furthermore, he almost invariably has problems in connection with his personal life or his business that disturb his adjustment. Thus, when we say we are trying to promote adjustment on the part of the child, we really mean that we are trying to develop his capacity for *adjusting* on the assumption that, if he can learn to face in an adequate fashion the problems with which he is confronted today, he may be expected to be adequate in meeting the problems of tomorrow.

The question may be raised as to the desirability of promoting adjust-

ment on the part of the individual Since adjustment implies the question "adjusted to what?", one might wonder if it is in their and society's best interest to have people adjust to conditions of poverty, slums, and other negative features of their environment A different aspect of the same question concerns the extent to which progress on both the social and the personal level is being brought about by persons who are maladjusted Generally, the producer, the achiever, the reformer are maladjusted in the sense that they are not in harmony with the conditions they find [1] The drifter and the loafer, on the other hand, tend to be perfectly contented with conditions as they are—no matter how bad We do not want the child in school to be too content with his present state of ignorance we want him to be under a certain amount of tension so that he will be jarred out of his complacency and made sufficiently anxious so that he will learn As we have seen, motivation with regard to any form of learning—whether academic or in the area of personal and social adjustment—is simply a matter of raising the anxiety level of the individual as a means of spurring him to learn more appropriate behavior Thus, the child who boasts must be made sufficiently anxious by the inadequacy of his present behavior that he will seek a more adequate adjustment

Adjustment is, of course directly connected with the concept of needs —or more specifically, adjustment refers to the adequacy of the behavior patterns by means of which the individual habitually satisfies his needs Thus, inasmuch as everyone has at all times, multiple needs to satisfy, everyone is perpetually faced with adjustment problems and everyone is, therefore, potentially capable of being adjusted or maladjusted depending on the adequacy of his need-satisfying behavior A person is considered maladjusted, for instance, if he consistently satisfies his needs of the present while increasing the severity of the problems of satisfying his future or his more basic needs, e g, the child who satisfies his needs through daydreaming rather than developing the skills which would permit him to convert his fantasies into actualities Likewise, adjustment implies that the individual must satisfy his needs within the framework of the rules, regulations, and mores of the social group in which he finds himself for, unless he can satisfy his needs in ways consistent with the standards of society, he is likely to find that his behavior involves him in conflict with the social order and leads to further problems of adjustment

The adequacy of the adjustment which the individual makes depends

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[1] Would teachers be willing to include in the category of reformer the child who rebels at the unsuitability (from his standpoint) of the curriculum and the procedures of the school?

in considerable measure upon the severity of the adjustment problems with which he is faced If the situations to which he must adjust (in relation to his potentialities) are such that he can satisfy his needs without undue difficulty, he is less likely to resort to asocial or atypical behavior and he is, therefore, more likely to be adjusted Severe and continued frustration of his needs, on the other hand, is likely to lead to maladjustment as the individual in desperation grasps at any straw that will cause even a momentary reduction in the tension associated with the frustration of his needs [2]

The severity of the adjustment problem with which the individual has to cope would depend on such factors as [a] the nature of the need being denied, [b] the extent to which it is being denied, [c] the extent to which other needs are also being denied, [d] the possibility of substitute goals and partial satisfactions, and [e] his basic security and the degree of his awareness of the frustration of his needs As long as his frustration concerns only a few of his needs, or even a larger number but to a minor degree, the individual can generally get along much as a car can run even though not all cylinders are supplying maximum power However, when the problem becomes unusually severe, he is likely to become desperate and deviant behavior is likely to result

LEARNING AND ADJUSTMENT

All the laws and principles of learning apply to the concept of adjustment—whether the behavior involved is desirable or undesirable—in exactly the same way as they do to the learning of academic material Thus, not only does the individual learn his adjustments but his learning follows the same sequence of steps as we discussed in the chapter on learning,[3] namely,

[a] The individual is motivated by virtue of a need being temporarily unsatisfied

[b] He looks to some goal as a potential satisfier

[c] Progress toward this goal is blocked by a barrier (Note This barrier may be physical, personal, social, societal, or cultural, or it may involve a conflict between incompatible goals)

[d] Emotional tension develops and varied response ensues as the individual attempts to reach the goal and reduce the tension

[e] The goal—original or substitute—is usually reached and equilibrium is restored

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[2] Just as undue ease in satisfying one's needs might lead to later maladjustment through failure to provide training in meeting problems at his level

[3] The steps are not listed in an identical fashion (Readiness, for instance, although assumed, is not specifically mentioned) but the process is the same

[f] Those reactions which are instrumental in reaching the goal and reducing the tension are learned whereas those not effective in this connection are dropped

The very fact that learning takes place only when the individual's present pattern of response is no longer adequate in meeting the demands of the situation implies that a certain degree of inadequacy and incompetence is characteristic of any learning situation. However, since an adjustment problem relates to the individual in a much more personal way than does the learning of, say academic material, it is more likely to involve feelings of inferiority and insecurity and these are quite obvious in the insecure person's tendency to derogate others, his poor reaction to competition, his oversensitivity to criticism, and his overresponse to flattery Thus, if the individual's present behavior patterns are adequate for him to cope with the situation readily, he has no adjustment problem If, however, the situation in which he finds himself is one in which he lacks the ability to attain his goals, he is faced with an adjustment problem, and the more severe the problem, the greater his insecurity and the more likely is the development of atypical and ineffective behavior

Adjustment and Maladjustment

Behavior patterns are learned as a result of the individual's attempt to reduce tension associated with the frustration of his needs Once learned, they maintain themselves by providing some satisfaction and they develop into habit motives which give stability and permanence to his behavior, hence, Shaffer and Shoben's definition of personality [329] as the individual's persistent tendencies to make certain kinds and qualities of adjustment The fact that behavior is learned in the process of satisfying one's needs may seem hard to believe in view of the short-sightedness of many individual's behavior on certain occasions and that of a few individuals on most occasions Yet this is the case and, even though the learning of undesirable behavior generally tends to be less conscious and less deliberate than the learning of desirable behavior, it is nevertheless learning in the accepted sense of the term, it is the modification of behavior as a result of experience and is explained on the basis of the same principles as any other form of learning All behavior—however stupid or short-sighted—has a purpose as the individual interprets the situation very often his overconcern with the immediate situation causes him to select immediate goals that are not in line with his long-range welfare The unlearning of undesirable behavior, on the other hand, calls for considerable effort since, once established, any form of behavior becomes

such an integral part of the total personality that it is quite resistant to change It is especially resistant to change in the case of the insecure person who cannot afford to take a chance experimenting with other modes of adjustment

Generally, if he keeps trying long enough, the motivated individual is able to overcome or circumvent the obstacle to his goal or reach a substitute goal which is reasonably satisfying If his behavior is completely ineffective with respect to the attainment of his goal, he will, of course, be forced to continue trying other modes of reaction until some degree of satisfaction is achieved through substitute behavior There are times, however, when the individual's behavior is only partially ineffective, leading to goals which are partially satisfying Unfortunately, since it provides some satisfaction, such behavior will tend to be learned in accordance with the laws of learning even though it is not in the individual's best interest from the standpoint of his long-term adjustment It is also characteristic of this type of behavior that it has to be repeated continually in a desperate attempt on the part of the individual to drain off the tension as fast as it accumulates This is rather evident in the case of people who boast or show off despite the poor reception their behavior gets from others

It may also be that the individual reaches a goal which, though satisfying in terms of his motivation, may involve him in difficulty with the rules of society If he is not sold on the rules involved, his only concern is in not getting caught and, if he is able to avoid detection, he is "ahead of the game " On the other hand, society makes a deliberate attempt to have its rules and regulations internalized by the individual and to the extent that it is successful in so doing, the individual will not be able to violate the constraints of society without automatically upsetting some other need or destroying some value of importance to his continued adjustment Thus sexual immorality may or may not result in guilt feelings depending on the extent to which it has become accepted as wrong by the particular individual Likewise, the delinquent may not see where he is wrong and may feel discriminated against when society punishes him In other words, social problems are not necessarily personal or clinical problems When a problem is both social and personal, adjustment is more difficult since the person must first resolve the personal before he can deal effectively with the social aspects

There may also be times when the individual cannot attain his goal without some form of outside help This may entail nothing more than a need for coaching in a special skill such as dancing, or it may call for psychological counseling which, when provided, will allow the in-

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dividual to achieve reasonably complete adjustment On the other hand, the obstacle may be of such magnitude and resistance, by reference to the individual's potentialities, that he may never attain his goals In such cases, he is likely to become desperate and to aggravate rather than solve his problem His only salvation may lie in his being removed from the situation or in his being provided with considerable support If this is not possible, his only escape may be in breakdown, with possible eventual recovery with psychiatric help and improvement in the conditions that caused the difficulty

Thus, maladjustment arises out of attempted solutions at tension reduction which give only partial or temporary relief, or out of attempts which, although acceptable at one time, become so entrenched as habits that the individual is not able to outgrow them It generally occurs in situations which are so resistant that the individual exhausts all the more desirable alternatives, or in situations which are so complicated that he cannot get insight into the relative dangers of the attempted solutions

Adjustment differs from maladjustment in degree rather than in kind and normal adjustment simply entails behavior that is within the range of tolerated differences, where the limits of such a range are uncertain and highly flexible More specifically, the adjusted person shows a relatively high degree of integration and consistency in his behavior displays behavior that is essentially effective in attaining his goals, faces problems realistically, and devotes his energies to the realization of his purposes In addition, he has found satisfactory solutions for the major problems which he faces and has effective ways of releasing tensions so that he is relatively free from conflict and tension In effect, he displays the emotional and social maturity which we have discussed in Chapters 5 and 6 On the other hand, when the individual is caught between a resistant obstacle and a persistent motivation, frustration and tension will mount to the point of causing excessive interference, and even disorganization of behavior It may be, for instance, that internal conflicts will cause the person to be at cross purposes with himself with resulting indecision and inability to coordinate his efforts in the attainment of his goals If this pattern tends to be typical of his behavior, he may be said to be maladjusted, although there is no dividing line at which a person ceases to be adjusted and becomes maladjusted

Maladjustment may be revealed through any number of symptoms, many of which—at least in their milder forms—are also characteristic of normal adjustment Among the more common, we might mention the following explosive behavior, general restlessness (including nail biting

and other nervous habits), preoccupation (daydreaming, absent-minded-ness, worry), withdrawal (excessive reading for vicarious excitement, shyness and general avoidance of social situations), minor physical dys-functions Another set of symptoms such as crying, temper tantrums, fixations or delays in normal growth, dependence on others, lack of motiva-tion, inability to make decisions or to assume responsibility, attempts to win sympathy, and selfishness are often signs of immaturity rather than maladjustment, i e , reflect failure to learn more mature ways of behaving rather than the learning of undesirable behavior patterns On the other hand, they can also be indicative of maladjustment, at least in the sense of a lack of harmony existing between the individual and his environment Furthermore, regardless of differences in the background of immaturity and maladjustment, both are difficult to deal with to the extent to which they have resulted in some satisfaction to the individual and are incor-porated into his self-image, changing calls for major reorganization of the total personality Furthermore, an improvement in behavior cannot take place in a vacuum and immature or maladjusted persons are likely to encounter difficulty in finding people endowed with sufficient patience to put up with them, let alone provide them with the permissive and supportive environment they need in order to improve

Adjustment Mechanisms

As we have seen in the earlier part of the chapter, the individual learns certain behavior patterns by means of which he attempts to satisfy his needs Thus the boy who is frustrated as a result of inability to find satisfaction for needs of social recognition or self-esteem by being on the honor roll *compensates* by making the football team or *rationalizes* that only sissies are interested in academic work, or even perhaps develops *neurotic symptoms* such as headaches that prevent him from studying so that his inability to make the honor roll is quite understandable These habits, known as adjustment mechanisms are neither disorders nor symp-toms of maladjustment they are simply the adjustment the individual makes when confronted with certain needs, on one hand, and certain situational realities, on the other

Adjustment mechanisms can be arranged according to any number of systems depending on the basis of classification used None of them is too satisfactory behavior is the resultant of multiple causations and is in-variably so complicated that it tends not to fall into neat categories Thus,

a given mechanism may resemble the other mechanisms in its category from one standpoint but also resemble mechanisms in adjacent categories in other respects Furthermore, a certain adjustment situation may give rise to any number of different adjustment mechanisms so that being able to identify the mechanism displayed by a given individual at a given time, either by itself or in terms of the category to which it belongs, is of limited value in dealing with the underlying problem Yet despite these arguments and the obvious necessity of considering any classification as merely suggestive, classifying adjustment mechanisms is probably justified on the grounds that it brings out the common features among them and tends to make for a greater understanding of their nature

Probably the simplest classification system is one in which adjustments are divided into those that are direct, i e , reactions by means of which the individual attempts to overcome the obstacle and reach the original or a substitute goal, and those that are indirect, i e , reactions in which the individual withdraws, rationalizes, or generally gives up trying to reach the goal he has set A more comprehensive classification system is that of Shaffer and Shoben [329] in which adjustment mechanisms are divided into five categories [a] adjustment by defense, [b] adjustment by withdrawal, [c] adjustments involving fears and repression, [d] adjustment by ailment, and [e] various nonadjustive reactions In general, the discussion in this chapter will follow this outline in a somewhat abbreviated form and the reader is referred to their excellent text and other sources for additional information [4]

DEFENSE MECHANISMS

The mechanisms to be discussed in this section are those in which the individual is still attempting, by minimizing his failure or attaining success by other means, to defend himself against feelings of inferiority occasioned by his failure to attain his goal As we have seen, all adjustment mechanisms relate to feelings of inferiority but, whereas these feelings may lead to withdrawal or even ailment, the mechanisms in this category represent attempts on the part of the individual to maintain self-respect through a defense against such feelings Included in this category are a variety of reactions ranging all the way from attention-getting devices to the more serious attempts to project the blame onto others, with compensation and rationalization being the most common

[4] Case studies are not given An actual case is generally so complex that, rather than provide a clarification of the principles involved, any discussion which could be included in the limited space allowed here would constitute a misleading over-simplification of the true case The student is referred to sources designed to provide a reasonably complete picture

Compensation represents an attempt on the part of the individual to overcome feelings of inferiority arising out of personal limitations in a given area by striving for success in the same or a different area. Thus, Demosthenes is said to have overcome a speech impediment by practicing speaking with pebbles in his mouth. Likewise, a boy may compensate for relative weakness in academic work by becoming an athlete or he may compensate in a peculiar area, e g, collecting snakes or college banners, where, because the competition is less keen, he is more likely to attain relative success

A common form of compensation concerns compensation through others. Parents, for instance, who perhaps feel inadequate as a result of their lack of education will go out of their way to have their son or daughter go to college and even to graduate studies. This type of compensation implies identification of the person with the individual through whom he compensates in order to get vicarious satisfaction of his needs through the achievement of the latter. Thus, a father will identify himself with his son with the result that the son's academic achievement becomes that of the father. Compensation through others is involved in the popularity of sports and of movies in which the spectator identifies himself with the players and obtains vicarious satisfaction through their achievement. Two observations in connection with such compensation are in order [a] With the present emphasis on professional-type sports, high schools and colleges are reducing drastically the number of their students who can derive satisfaction for their needs through actual participation rather than through identification with the team, [b] Parents who compensate through their children can occasionally make it rough on the children the parent who harbors a deep sense of inadequacy and frustration as a result of his inability to get past the fourth grade may do his son considerable damage by insisting upon unrealistic standards of academic achievement. In the same way, the alumnus who could not toss the pigskin ten yards when he was in college may well demand the head of the coach whose won-lost record is somewhat short of perfection

Compensation is also involved in such common attention-getting devices as boasting, lying, and exhibitionism as well as in more complicated reactions such as compensation against evil in the abstract in which the individual crusades with unusual zeal against such "evils" as tobacco alcohol, or sex as a means of defending himself against feelings of inadequacy in these areas. Sublimation is a term used to refer to socially desirable compensation, particularly when it applies to the area of sex. Thus, teaching and nursing might be considered forms of sublimation of the sex drive

Rationalization consists of giving plausible but untrue reasons for one's behavior as a defense against having to admit that, by objective standards, the behavior is silly, irresponsible, or otherwise unacceptable Rationalization is an unconscious mechanism when false reasons are given knowingly, they are lies, not rationalizations Rationalization is a face-saving device which goes back to Adam's "The woman whom thou gavest to be with me, she gave me of the tree, and I did eat "[5] It may take on any number of forms, including "sour grapes" or "sweet lemons," or the blaming of incidental causes, e g , kicking the stool for its having been in the way

A more serious form of rationalization is involved in the mechanism of projection, wherein the individual perceives in others the traits or motives in which he feels his own inferiority Thus, the child accuses the teacher of having hostile feelings toward him while, in reality, it is he who is hostile toward the teacher Prejudices and logic-tight compartments, in which obviously false beliefs are held despite logical evidence to the contrary, also have elements of rationalization and projection along with various degrees of delusion

WITHDRAWAL MECHANISMS

In mechanisms involving withdrawal, the individual is no longer seeking to achieve satisfaction for his needs through the attainment of his goal but rather runs away from the frustrating situation Those mechanisms are generally undesirable since they do not solve the problem and yet remove the individual from the pressure that would force him to do something more constructive than simply withdraw Teachers should be particularly aware of the relationship between simple withdrawal and more serious forms of maladjustment such as schizophrenia and should be alert to danger signs They should be aware of the fact that the child who never misbehaves, who is often the model child may be in grave danger of later difficulty and is, therefore, a more serious case of maladjustment than is the troublemaker who is fighting to satisfy his needs

Probably the simplest and the most common forms of withdrawal concern bashfulness, timidity, negativism, and general seclusiveness in which the individual, perhaps as a result of having been the victim of frustration and failure along with repressive discipline, refuses to take part in situations which may mean further failure Another well-known

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[5] Rationalization is rather common among teachers Teachers, for instance, often blame the inadequacies of their students on the failure of the teacher of the preceding grade and of the parents

form of withdrawal is fantasy, or daydreaming, in which the individual becomes the conquering hero for whom success and revenge are unlimited or the suffering hero whose misfortunes cause even his enemies great sorrow Fantasy is not harmful in itself, it may even give the individual ideas that he can then proceed to put into practice However, it possesses the danger of being used in lieu of more constructive behavior, for as long as the individual finds no satisfaction for his needs, he will be forced to continue seeking some adjustment but, when he gets partial satisfaction from his fantasies, he is more likely to rely on them more and more and, as a result, become progressively less capable of doing something more constructive about his problems On the other hand, not all retiring children are in immediate need of a psychiatrist some people enjoy peace and quiet and teachers should refrain from using social participation as the sole criterion of adjustment

A less obvious form of withdrawal consists of plunging into a number of occupational or social activities or becoming drowsy, or turning to alcohol, narcotics, or even sweets as a way of running away from one's problems Occasionally, a person with severe problems which he can neither resolve nor escape from will turn with a vengeance to his work or will get involved in numerous activities in an attempt to forget Sometimes, such a person will have a nervous breakdown and people are likely to pity him and commend him for having worked so hard that he became ill when, in reality, the hard work was the result of the same difficulty that eventuated in the breakdown but not its cause [a]

Procrastination is another common variety of running away from difficult situations which is indulged in by very normal people Also common is retrogression in which the individual goes back to a more immature mode of behavior, e g, adults resort to crying as a way of solving problems and the preschool child who has become quite grown-up may revert to infantile behavior when a new baby is born in the family

MECHANISMS INVOLVING FEAR AND REPRESSION

Everyone has at least minor fears In fact, fear (insecurity) is a basic component of all adjustment mechanisms in compensation, fear is dispelled by overassertion of adjustment, while in withdrawal, the in-

[a] The situation is essentially similar to that which produces neuroses in animals in laboratory experiments [32, 238] A dog, for example can be conditioned to discriminate between two notes of different pitch However, is the two notes are brought closer and closer together in pitch to the point that the dog can no longer make the discrimination, he will become frustrated and attempt to run away from the situation However, if he is forced to remain in this impossible situation, he will soon undergo a disorganization of behavior to the point of barking, biting, and tearing at his harness and become incapable of making even the most elementary discrimination

dividual avoids fear-producing situations On the other hand, persistent
and excessive fears, particularly of an abnormal nature, i e., phobias, are
indicative of maladjustment A person might have an intense fear of
dogs as a result of having been bitten by a dog but it is something else
for an individual to have frantic fears of high places, of low places, of
crowded places, of wide open places—none of which is a normal stimulus
for fear

Generally, such abnormal fear can best be explained in terms of the
individual's having had an unpleasant experience in connection with
which he or she feels some degree of guilt Because of these guilt feel-
ings, there is a tendency for the individual not to face the situation but
rather to repress the incident into the unconscious as a means of avoiding
anxiety But a repressed incident is not a dead incident and it comes up
to consciousness again in a disguised form So the girl who has been
sexually assaulted in a situation in which she feels she was not completely
blameless finds her fear of the original situation transfer from one object
or situation to another till, for no apparent reason, she now fears being in
a large room or has an intense fear of being left alone even for a few
minutes—stimuli which are symbolic of being without protection Re-
pression serves the purpose of protecting the self but it is one of the most
dangerous mechanisms because the underlying dynamics cause unex-
plained behavior As long as problems are kept in the open, they can be
understood and dealt with but, once repression has taken place, the in-
dividual can be helped only by a competent clinician

Also involving the repression of guilt feelings is the mechanism
known as reaction formation, in which a person goes out of his way to be
nice and considerate of another person as a way of reacting against the
opposite feelings which the individual harbors with some guilt Thus,
the mother whose career ended with the birth of her child may react to a
desire that the child be dead by granting his every wish and working well
beyond the call of duty in seeing that no harm befalls him Such be-
havior may become quite compulsive for, as in the case of the obsession-
compulsion of Lady Macbeth, the behavior is related only indirectly to
the goal and the compulsive reaction has to be repeated in a desperate
effort to relieve the tension which seems to accumulate as fast as it can
be dissipated by such relatively ineffective means

MECHANISMS INVOLVING AILMENT.

When the individual is caught in a conflict, he may unconsciously
resort to ailment as a way out of his predicament These ailments do not
have an organic basis—at least they do not have an organic basis that we

know of—but rather are of psychogenic origin They are generally known as psychoneuroses (or simply neuroses) under which can be grouped two broad areas of physical dysfunction [a] various forms of hysteria such as localized pains, paralyses, and anesthesias, and [b] motor psychoneuroses (or functional hysteria) such as occupational cramps, stammering, and stuttering A number of servicemen, for instance, suffered from shell-shock during the first world war and war fatigue during World War II, both terms referring generally to some form of hysteria Thus to use a fictitious example, a soldier is in the front lines He is very scared and wishes he could be somewhere else, but among the values he has incorporated into his self-concept are bravery and loyalty which prevent him from leaving and "letting his buddies down " If he is wounded, perhaps in a minor way—immediately he is taken away from the danger zone and his conflict is resolved he is no longer afraid nor does he have to feel guilty about not being in the front lines since it is accepted that wounded men should be out of combat In due time the wound heals but a certain pain or stiffness remains in the wounded area so that he cannot rejoin his unit in the battle lines He has—unconsciously—made an adjustment of a neurotic nature as a means of avoiding conflict [7]

Many psychologists feel that the majority of speech disorders such as stuttering and stammering are cases of functional hysteria Likewise, a good fraction of the cases of arthritis, hay fever, asthma, migraine headaches, backaches, and other ills affecting the average person are considered to be of psychogenic origin, and medical doctors estimate that over half of their clientele is made up of people whose ailments are psychogenically induced

The cure in cases of hysteria is generally slow First, the person must be motivated toward a cure the soldier will not improve as long as he knows that the day he is discharged from the hospital he will be back in the firing zone Then he must be given the means of saving face, for he cannot get out of the hospital cured the day armistice is signed Since it is relatively difficult to change the basic personality of the individual which led to the hysteria, it is quite a problem to change the basic motivation and it is typical of patients suffering from hysteria to be indifferent to their troubles In fact, since the hysterical symptoms serve to reduce the conflict, it is quite likely that, unconsciously, they actually enjoy their ailments and have no inclination to get rid of them

It is generally agreed that persons with hysterical symptoms tend to be socially immature and highly suggestive so that when they are ready

[7] Neuroses need to be distinguished from malingering, which is a conscious faking of illness

to be cured they may respond to treatment by a specialist who can convince them that a cure is possible An interesting case of such a cure is that known as stocking anesthesia in which a patient whose leg is completely insensitive to any feeling will, at the suggestion of the therapist, recover feeling in the leg as a stocking (which has been put on the leg for suggestion value) is gradually rolled down an inch or two each day Also, generally useful in the treatment of neurotic patients, is the common practice among medical doctors of giving them painful injections and foul-tasting medicine as a means of making their symptoms unsatisfying, but such treatment may serve to convince the patient of the reality and severity of his illness Furthermore, cures of this type merely remove the symptoms and, unless something is done about the underlying conflict curing one symptom will only lead to the occurrence of other symptoms and even of more serious difficulties

NONADJUSTIVE REACTIONS

As stated before, when behavior is only indirectly related to the goal and, therefore, yields only partial satisfaction, the individual finds it necessary to repeat it in a desperate attempt to drain off tension as it accumulates In such cases the individual is likely to be in a constant state of tension as evidenced by digestive upsets, insomnia, diffuse motor activity, and anxiety To the extent that the person fears taking the risk involved in attempting to reach the goal, he is incapable of taking positive action the worrier, for instance, does not take positive steps to solve his problem, he simply continues to worry—often not even knowing what he is worried about

Among the more common forms of nonadjustive reactions might be mentioned [a] neurasthenia, which is a form of persistent anxiety state characterized by nervous exhaustion as in the case of the chronic invalid, and [b] hypochondria, a general preoccupation about health and an exaggeration of minor disorders In these cases, as in the case of hysteria, there is generally to be found in the background of the individual a favorable experience with illness Thus, the woman who feels lonely and neglected, as a result of her children and husband having developed interests outside the home, may find that illness on her part keeps everybody home in the evening for a change She may unconsciously feel that being sick is an effective way of satisfying her needs As with hysteria, the cure is difficult to achieve the person must first become convinced that giving up the partial satisfactions connected with being sick will be more than compensated for by the satisfaction of being well It is, of course, much better to avoid the development of such symptoms A

good rule to follow with regard to hysteria and neurasthenia, for instance, is never to make illness a pleasant experience Thus, the child who has a headache at nine-o'clock should be put to bed for the rest of the day— minus comics and TV If he is really sick, the rest will do him good, while if the headache is of a psychogenic origin, putting him to bed will discourage the formation of hysterical symptoms It is, of course, necessary to deal with causal factors Perhaps some of the pressure at school should be lightened or the child should be made to realize that it is not necessary for him to be sick for people to take notice of the fact that he exists

EVALUATING ADJUSTMENT MECHANISMS

All people have needs therefore, all have to make use of adjustment mechanisms In fact, adjusted as well as maladjusted persons make some use of most of these mechanisms Adjustment and maladjustment are a matter of degree and, even adjusted people daydream, rationalize and develop forms of hysteria such as migraine headaches On the other hand many of these mechanisms can be considered potentially dangerous— although each would have to be evaluated in terms of the particular individual involved and the particular situation in which he finds himself Speaking in general terms, adjustment mechanisms are considered undesirable in the following cases [a] when they displace some more constructive mode of adjustment, [b] when they are relatively ineffective in satisfying needs, [c] when they introduce greater problems than the need they satisfy, and [d] when they create adjustment problems in other people as in the case of fighting Perhaps a more adequate—although less explicit—guide for the evaluation of adjustment mechanisms can be found in Shaffer's statement that only those adjustments that fail to satisfy individual and social needs are maladjustments

Understanding the Child

IMPORTANCE OF UNDERSTANDING THE CHILD

Every experience which the child undergoes affects his adjustment one way or another It is therefore, essential that the teacher understand each child as an individual if he is to provide educative experiences that will be conducive to his maximum growth Actually, the average teacher can be only partially effective in this respect not only does he not have the time and opportunity to make a thorough study of each child while at the same time attempting to have the class as a whole attain certain

academic standards, but he is also relatively untrained in the area of the psychodynamics of behavior To make matters worse, behavior, being the product of multiple causation over a period of years, is relatively complicated In the field of medicine, the trouble can be identified by the symptoms and, once this is done, a rather complete understanding of the disease including its etiology and its treatment is attained In the area of maladjustment, on the other hand, symptoms rather rarely identify the trouble since learning plays an important part in determining the behavior by means of which the individual attempts to satisfy his needs Hence, each case tends to be unique so that labeling a child an extrovert really does not tell us how his behavior can be improved or how he can be handled best Likewise, let us hope that the adjectives *good* and *bad* will soon drop out of the vocabulary used by teachers to label children and that they will be replaced by the concept of understanding and helping them

Nevertheless, in the final analysis, it will be the teacher, not the psychiatrist or the clinician, who will do most for the vast majority of children in the development of effective behavior Qualified or not, the teacher must make understanding of children and their behavior one of his primary responsibilities—for understanding children is an integral aspect of teaching them, not something one undertakes when things get out of hand And whereas love is not enough, it is essential, and, when coupled with sensitivity and a good grasp of the basic principles of psychology, it will go a long way In fact, it will go the whole way with most of the children in the classroom, for children don't have personalities made of glass they have a wonderful resiliency to stress and strain and all they want—and all they need—is perhaps a little help here and there, but mostly, just a chance to grow

Unfortunately, the easy way (the lazy way) is not to bother, simply to present academic material, make assignments, and ignore the fact that children are people with individual characteristics and problems To understand children calls for time and effort, and the more understanding a teacher is, the more they will come to him rather than to other teachers who won't help them But it is time and effort well spent for it pays dividends in pupil adjustment and in teacher satisfaction A little help given at the right time will often put the child back on his feet and it is surprising the number of children, perhaps drifting in the wrong direction, who have found themselves as a result of a little understanding on the part of a sympathetic teacher In fact, it is debatable whether any saving is effected by ignoring students except in the case where, in final desperation, they drop out of school When they remain in school,

whatever saving is involved, if any, is very shortsighted even from a purely selfish point of view, for neglected students soon fall behind become discipline problems, and generally multiply a hundred-fold the teacher's problems It just makes good sense to set up a definite appraisal program designed for such purposes as knowing the child as an individual, providing the faculty and the guidance staff with information upon which to base counseling, increasing the child's self-understanding, and providing the basis for effective parent-teacher cooperation

If we are to understand the child, we must know something of the experiences to which he has been subjected and the forces which have played upon him Thus, the child who has been mishandled throughout his childhood may well have deep-seated problems that will defy superficial treatment This would often be true of delinquent children, for instance, who rarely get the understanding and the help they need in order to be able to change their pattern of behavior Of course, each child is unique and no group diagnosis can be made as to the causes or the treatment of delinquency Many delinquents, for instance, simply have not internalized the constraints of society, a situation likely to occur when adults make unreasonable or inconsistent demands on the child or when they allow him to grow like Topsy without any demands being made upon him He needs discipline but only when it is consistent and based on love and security does it lead to character formation, i e, only then can he grow in self-direction Thus, the delinquent is often confused by the conflicting demands made upon him by the different cultural groups to which he belongs, e g, to fight in his neighborhood but not at school Furthermore, he is not helped to improve his behavior by the harsh treatment to which he is sometimes subjected when he is caught Actually, delinquency is more than the matter of the commission of an act which is in violation of the law it generally involves the whole child, his values, his goals, and his purposes and delinquents have been found [138] to be more independent, extrovertive, vivacious, impulsive, aggressive and adventurous than nondelinquents, but also to exhibit less self-control Adjustment to the school by comparison to that of nondelinquents is also of interest here As shown in the chart (Fig 16 1), delinquent children are more likely than nondelinquents to dislike school, to misbehave in the classroom, and to be truants

Likewise, teachers, belonging almost exclusively to the middle class and subscribing to middle-class values, may have difficulty in understanding lower class values and behavior Children from the lower socioeconomic group, for example, tend to express aggression more directly and consider fighting as the thing to do when someone crosses
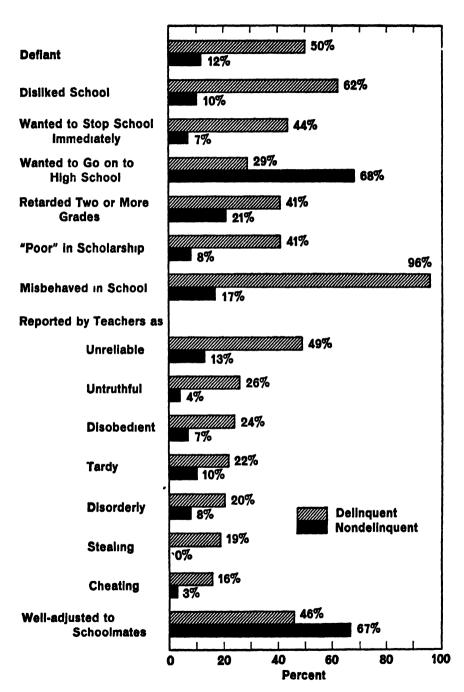
FIG 16 1 *Reactions of delinquents and nondelinquents toward the school situation After Glueck [138]*

them not to fight would cause them to lose self-esteem as well as status among their peers They tend to be somewhat more authoritarian and punitive than children from a higher group [98, 166] Above all, as a result of the experiences they have undergone, they subscribe to a set of values, particularly as it relates to education and school, which is so different from that prevailing in the predominating middle and upper social groups that for them to adjust to the demands of the school is often a matter of considerable difficulty And their problems are not made any easier by the fact that the curricular offerings of the school and the demands made upon them are often unrealistic from the standpoint of their background, their goals, and their purposes

Delinquency and aggression, while understandable from a clinical point of view, pose quite a problem to the classroom teacher Whereas in clinical work the expression of hostility is often the key to psychotherapy and whereas such clinicians as Horney [186] are of the opinion that unexpressed hostility is the chief cause of anxiety and neurosis, there are limits to the extent to which the teacher can allow feelings of aggression and hostility to be expressed in the classroom so that, no matter how desirable such expression may be from a mental health and personality development standpoint it has to be curbed To the extent that a permissive atmosphere exists in the school, the child can express hostility without guilt feelings but, in view of the social situation involved, care must be taken to channel hostility into constructive ends rather than let it interfere with the growth of other children or with the morale of the group In the meantime, when delinquency or aggression does occur the teacher needs to remember that it is a symptom of something relatively basic rather than merely an undesirable act Perhaps the child is acting in accordance with his system of values as derived from his socioeconomic and cultural group and may need re-education and a redetermination of his goals and values He may not even know his behavior is unacceptable Perhaps he is trying to tell all concerned that the demands and the standards imposed upon him are unrealistic and that the curriculum is unsuited to his needs In the same way, the child who is absent frequently because of headaches and other minor ills resulting from his unconscious attempt to avoid a difficult situation, may need understanding and a lightening of the demands made upon him so that he can learn to see the school as a pleasant place in which to be

ASPECTS OF PUPIL APPRAISAL

In order to be effective, a pupil appraisal program must be systematic and based on sound theoretical considerations The problem in-

volved is that of accumulating whatever data are pertinent to the uniqueness of the individual, including his own reactions to these data and to himself as a person It is necessary to consider all the children—not only the troublemakers as is so often done now—and to make as complete an appraisal of each individual child as possible Since behavior involves the whole child, problems in one area are likely to lead to problems in other areas so that an understanding of the child calls for seeing the total child in his total environment It is also necessary to see him in perspective by considering his present status in terms of his previous experiences, his unresolved difficulties, his present values as well as his present and future goals

This calls for taking a number of appraisals at different times and in different settings so that we can arrive at an understanding of his typical behavior patterns rather than be misled by unusual incidents Furthermore, if we are to understand the child, it is necessary to tap all relevant sources of information, among the more important of which might be mentioned the following

The child Obviously, no other source can give us as good an understanding of the child as the child himself There is, therefore, need for the teacher to get acquainted with him—in connection with the formal situation prevailing in the classroom and especially under conditions of free atmosphere such as might be found in the homeroom or on the playground Of course, he does not understand himself too clearly so there is no point in expecting him to give a psychiatrist's explanation of his underlying motives and unresolved conflicts, but his behavior will provide the competent teacher with the means whereby he can be understood Informal contacts' and interviews conducted in an atmosphere of permissiveness and acceptance can be most valuable allowing the child whose behavior has been undesirable to give his side of the story, for example, can give the teacher valuable insights into what makes him tick Useful information can also be obtained from such instruments as the Mooney Problem Check List and the various personality and interest inventories available commercially, although these should not be necessary in a grade school where teachers have the same children all day for a whole year

The home The child cannot be understood apart from his home Therefore, the teacher needs to know the general status of the home, and especially the attitudes which parents and siblings and even the community hold toward the school, toward the teacher, and toward education He needs to know the parents' views toward such things as discipline, their system of values, their goals, and their general expectations

from the child But most of all he needs to know something about the emotional climate of the home for very often the child's problems at school are very closely related to his problems at home, and, if he is having troubles there, he has all the more need for understanding at school, lest he sour on all adults

It is also important that the teacher appraise the socioeconomic and cultural status of the home for, when the home and the school subscribe to different cultural and economic values, the child may be involved in conflict to the extent that accepting the school may appear to him as the equivalent of being disloyal to his home and to his peers In fact, the teacher needs to remember that no matter how bad the home situation, the child has certain loyalties which he cannot violate without conflict and that he, therefore, needs to be careful in his attempt to reach him and guide his growth toward higher cultural standards

The child's former teachers The teachers who have had the child in class should have in their possession considerable data accumulated through observation and other means In most schools, for instance, teachers are encouraged to write anecdotal records on the children in their classes and, when they are conscientious in the matter, anecdotal information of considerable value in understanding individual children can generally be found in their folders Unfortunately, anecdotal records tend to be time-consuming and busy teachers often report only the unusual and the negative rather than the more typical aspects of the child's behavior Where this is the case, their use should be discouraged, for, unless they are a fair sample of his behavior and are objective and accurate, they can do him more harm than good Even at best, care must be taken that they do not prejudice future teachers against certain children and Rogers [310] questions the keeping of records from this standpoint The same comment can be made with respect to gossip and general impressions often exchanged among teachers

Tests and other formal instruments Much of the information we need about the child as, for instance, his intellectual capacity, his special abilities and talents, his academic status, and perhaps his interests and personal adjustment cannot be obtained with sufficient precision by the usual observational and anecdotal techniques just discussed and recourse must be made to more formal and technical instruments Of course, these instruments have to be used cautiously and with due awareness of their limitations but they provide objective evidence that is certainly indispensable to the classroom teacher, particularly as it is used to confirm data from other sources There is need for a formal testing program consisting of standardized tests that will give a broader basis for evaluating

progress to supplement the data obtained through the informal, and even the incidental, appraisal made by the teacher, as well as those obtained through rating scales, questionnaires, and inventories

Of primary interest from the standpoint of the school are the child's motivation, his values, goals, aspirations, and interests as well as his attitudes—for these are the prime determinants of what he will do Most of these things are, unfortunately, rather difficult to appraise except by means of subjective judgment Interests, of a vocational nature, for instance, can be measured through a number of standardized interest inventories but other interests have to be appraised through observation of his leisure time activities, or through the analysis of the themes he is asked to write on such topics as "My Hobbies"

Probably no more important aspect of this area can be found than the child's attitudes toward the school itself The attitude of the individual child can usually be determined by observation and interview but when it comes to group attitudes, a more valid appraisal of the morale of the student body and pupil reaction to the various aspects of the school program can probably be obtained by means of an unsigned questionnaire such as that suggested by Hand [165], a few sample questions from which are reproduced below

In general, how well do you like your school? (Check one).

_____ 1) I like it very much

_____ 2) I like it

_____ 3) About half and half

_____ 4) I dislike it

_____ 5) I dislike it very much

a How proud of your school are you? (Check one).

_____ 1) I am very proud of my school

_____ 2) I am proud of my school

_____ 3) I am not proud of my school

_____ 4) I am ashamed of my school

b If you are proud of your school, tell your main reason why

_____

_____

c If you are not proud of your school, tell the main reason why

_____

_____

In general, are you satisfied or dissatisfied with the way you are treated by teachers and other school officials? (Check one)

_____ 1) Very well satisfied
_____ 2) Satisfied
_____ 3) Half and half
_____ 4) Dissatisfied
_____ 5) Very much dissatisfied

Do the pupils in your school treat one another fairly and kindly? (Check one)

_____ 1) Yes, practically all of them do
_____ 2) Yes most of them do
_____ 3) Yes, about half of them do
       4) No, most of them do not

All in all, how well satisfied are you with your school? (Check one)

_____ 1) I am very well satisfied with my school
_____ 2) I am pretty well satisfied
_____ 3) About half and half
_____ 4) I am dissatisfied (not satisfied)
_____ 5) I am very much dissatisfied (not satisfied) with my school

The personality of the child his emotional balance, and his habitual traits are of immediate concern to the teacher for the bearing which they have on the other aspects of his behavior and growth Much of the information which the teacher needs in this area can be obtained by observation particularly in the grade school Of course the teacher needs to be alert to the limitations of observation but very often, observation is the only means available for obtaining data regarding the child's personality, and all that can be done is to strive to make observation as valid and reliable as possible Whenever feasible, one's observations should be supplemented by other techniques or confirmed by the observations of others research [114, 158, 272] in the area of intragroup relations, for instance, has shown the relative inadequacy of teacher observation as a means of appraising the social composition of the classroom

Additional information can be obtained from having children write themes on such topics as "My Biggest Problem" A number of standardized inventories are also available such as the California Test of Personality, the Bell Adjustment Inventory, and others, but most of the more common inventories are rather easy to fake and it is essential that the student be convinced that the only reason for his filling out the inven-

tory is to enable the teacher or counselor to be of greater help to him and that, therefore, it is in his best interest to give candid answers Even then some faking will take place and the results should be interpreted rather cautiously At the more advanced level, such tests as the Minnesota Multiphasic Personality Inventory and the projective techniques are relatively more adequate for appraising the personality of the individual but, on the other hand, they require special competence in interpreting the results

These data should be incorporated into a cumulative folder made available to all teachers who have contact with the child This folder must be complete, accurate, and concise, otherwise, it will not be worth the teacher's time to consult it Clerical assistance should be provided for such purposes as putting these data on a profile which will tell at a glance many of the things which an interested person wants to know Such clerical tasks can be time-consuming and take the teacher away from other things for which he is paid and for which he is better qualified Unless such help is provided, many teachers will not cooperate or will do only a perfunctory job A good cumulative record system should provide the teacher with the basic information he needs in dealing with the vast majority of his students On the other hand, special cases will occur in which he will want to consult with the principal, the counselor, the doctor, or the social worker in order to get new insights into the problem of a given student [*] At times, it may even be necessary to carry out a case study in which the teacher, the doctor or nurse, the psychologist, the social worker, and perhaps others will each contribute what he knows about a given child Unfortunately, such detailed studies are extremely time-consuming and can be carried out for a few advanced cases only—often too far advanced for any major improvement to be effected—so that their contribution to the over-all adjustment program of the school is relatively limited

HIGHLIGHTS OF THE CHAPTER

The problem of the personal and social adjustment of the child has received considerable attention in the modern school and the teacher,

[*] There is possibly a relationship between psychological disturbances and such aspects of physiological make-up as glandular imbalance It is also known that some cases of emotional instability have been found to display the epileptic pattern of brain impulses on the electroencephalograph This is an area which might bear further investigation in cases of severe and/or persistent misconduct

even though not too highly trained in clinical areas, needs to be familiar with the major principles of adjustment if he is to be effective in promoting this important phase of education The following are among the more important concepts covered in this chapter

[a] Adjustment refers to a state of harmonious relationship existing between the individual and his environment and it must, therefore, always be considered in terms of the question "adjusted to what?"

[b] Adjustment is a relative concept complete adjustment cannot be achieved, nor would it be desirable for people to be adjusted to some of the conditions of their environment Motivation, for example, is essentially a matter of jarring the individual out of his complacency and forcing him to make new adjustments

[c] Adjustment is not a static condition but rather a continuous process of *adjusting*

[d] Adjustment is directly connected with the concept of needs It relates to the adequacy of the behavior patterns by means of which the individual habitually satisfies his needs

[e] Modes of adjustment are learned according to the same principles as govern any other form of learning those adjustments that lead to the attainment of the individual s goals (and the satisfaction of his needs) are learned

[f] The term *adjustment mechanism* is used to label the learned habits by means of which the individual satisfies his needs

[g] Some of the adjustments made by the individual are not in his best interest from the standpoint of his long-term welfare

[h] The adjustments used by adjusted and maladjusted persons differ in degree rather than in kind Only those adjustments that fail to satisfy individual and social needs are maladjustments

[i] The teacher needs to understand the child if he is to be successful in guiding his growth

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QUESTIONS AND PROJECTS

1 Evaluate [a] The eccentricity of many great people suggests that
the concept of normality often means nothing more than the encouragement
of conformity to mediocrity [b] Much of the problem behavior common
among boys is nothing more than a healthy nonconformity to impossible
standards and demands of adults [c] Far too many of the efforts of the
school have been directed toward the maladjusted, the dull, the unfit (to
the neglect of the competent) In the case of the maladjusted the school
does not have the time nor the competence to be effective in remedial work
It cannot and should not be expected to assume responsibility for such cases
and should place the burden on the home and other social agencies where
it belongs

2 What is the present status of the inherited basis of maladjustment?
Read Shaffer and Shoben (p 360 ff) and other references given in
Suggested Readings

3 What is the relationship between personal and social adjustment and
the maximum realization of one's potentials?

4 What criteria should be used in the evaluation of the quality of
a given adjustment mechanism? Who is to be the judge of that quality?
What part should the moralistic aspects of the situation play in such a
criterion?

5 How effective are nerve tonics used for the relief of nervous
conditions?

6 Occasions are bound to occur where children will get very provoked
at their parents and teachers How can adults make it possible for children
to express anger, and even hostility, without later suffering from guilt
feelings?

17

Mental Health in the Classroom

❦

There is little that the school teaches that is worth achieving if the price is a maladjusted youngster Of what avail is it to give him a rich array of skills and a wealth of informational background if he is too disturbed to be able to use them?

RIVLIN *

THE IMPORTANCE OF MENTAL HEALTH cannot be overestimated Fortunately, a great deal of attention has been given in recent years to this important aspect of the individual's total personality Not only has the school become much more conscious of its responsibility in this connection, but the community at large has also demonstrated its interest in the problem through very active mental health groups composed of lay persons as well as professional medical, clinical, and teaching personnel

Extent of the Problem

From the days of Adam and Eve—or at least from the days of Cain—problems of mental ill-health have been with us These, then as well as now, ranged from the mild problems that occasionally bother the most

serene and calm person to the drastic disturbances that characterize the psychotic It is only recently, however, that mental-health problems have gotten understood and accepted for what they are, namely, a state of ill-health in the mental field comparable to similar conditions in the field of physical health Thus, until recently, psychotic persons were considered to be possessed of the devil and were burned at the stake or hidden at home or pushed out into the street so that neighbors would not know of the existence of such a person in the family Mental institutions, or asylums as they were called, kept the insane much like beasts, often in chains and floggings were not uncommon Today, on the other hand, it is not uncommon for people to visit a psychologist or a counselor in connection with personality difficulties in much the same way as a person sees a physician for a check-up or for minor treatment

Mental illness is not only our number one health problem but its incidence is actually on the increase Whether this implies that people are more maladjusted than they were years ago is a matter of conjecture It can be argued that the complex age in which we live with its urbanization and its resulting crowded areas, lack of responsibility on the part of children, lack of satisfaction out of one's job resulting from monotonous machine tending, and other social ills is conducive to mental illness On the other hand, the higher recorded incidence of mental illness may reflect nothing more than a greater awareness of mental-health problems a greater ability to detect them, and a greater willingness to admit their existence And, of course, the fact that people live longer also contributes to an increase in the mental problems connected with old age

Statistics on the prevalence of mental disorders are difficult to appraise Figures from the National Association for Mental Health [318] indicate that, in the area of the psychoses alone, there are in the United States about three quarters of a million patients in institutions for the insane and that a quarter of a million new patients are admitted each year (in addition to the one hundred thousand readmissions) but this does not include the many patients who are cared for by relatives or are placed in special homes The White House Conference on Child Health and Protection (1930) [416] estimated that some 2 5 million American children (i e, over 10 percent) displayed well-defined behavior problems Likewise, Cobb [63] estimates that some seven million Americans suffer from various mental disorders while the National Association for Mental Health places at nine million the number of Americans who suffer from mental illness and other personality disorders—the discrepancy being due, of course, to the degree of severity of the disorder used in the criterion

In the area of the neuroses, it is estimated that over half of the clientele of the average medical practitioner suffers from illness of psychogenic rather than organic origin During the last war, some 900 thousand young American men were rejected from military service because of personality problems and 460 thousand were discharged for mental illness (about 36 percent of the total medical discharges) and another quarter million were discharged for neuropsychiatric reasons [318] Many developed hysterical or other symptoms which not only precluded further military service but also caused them to be hospitalized at considerable cost to the taxpayer In the same way, the cost of goods purchased incorporates a sizable mark-up resulting from wages paid to absentee workers—at home, because of migraine headaches and other neurotic dysfunctions—or on strike, because of rigidity that prevents labor and management from agreeing on what is fair and what is right

Mental ill-health also underlies many of the social problems that confront us daily The fact that some three out of every four marriages end in divorce is evidence of the emotional instability of many "adults" Misbehavior ranging from minor classroom problems to juvenile delinquency and adult crime, graft, corruption, even on the part of trusted officials, is further evidence of the same lack of adjustment It is also true that people lose their jobs or at least miss out on promotions very often not for lack of competence in vocational skills but rather because of inability to get along with others[1] In fact, what is probably the greatest single weakness of the average person, namely, inability to inspire others to give their best in the attainment of desirable goals—which is quite evident in the failure of many leaders whether in school, business, industry, government, sports, or even club work—is very often due to some personality quirk that antagonizes would-be cooperators and followers And not least in this connection is the distrust that currently characterizes human relations at the personal, national, and international levels

The cost to society of the problems just mentioned is impossible to estimate but there is no doubt that it is high In the area of crime, there are well over a half million Americans over eighteen years of age supported at taxpayers' expense in jails and prisons at any one time The

[1] The fact that people frequently lose their jobs because of inability to get along with fellow-employees and superiors is often interpreted to mean that personality is more important in vocational adjustment than is job competence Actually, this is a misinterpretation since most firms screen prospective workers in terms of potential job competence, only in the case of the failure of the screening device can an employee be found lacking in this respect Therefore if later he is fired from his job, it is likely to be for reasons in areas where adequate screening was lacking, e g , personality

cost of hospitalization of psychotic patients in state institutions alone is approximately a billion dollars a year (exclusive of the loss in earning power of the patients) And, of course, the monetary cost would be a relatively minor consideration by comparison to the cost in terms of the unhappiness and the disruption in the lives of the patients and their relatives

Thus, as summarized by Griffin, Laycock, and Line [157] in 1940, out of a hundred elementary school children selected at random, four or five will spend part of their lives in mental hospitals, four or five will develop serious mental illness but will be cared for in special institutions,[2] one or two will commit some major crime and will spend time in a jail or penitentiary, three or four will be so handicapped by retarded or stunted mental development that they will have difficulty in becoming useful and productive citizens Of the remainder, it is estimated that from thirty to fifty will fail to reach the maximum efficiency and happiness in life possible for them because of unwholesome emotional habits and personality traits A more up-to-date—but hardly more encouraging—report was given by William Menninger [260] in 1948

> . half of our hospital beds in America are devoted to mental illness That fact is often amazing to laymen Statistically about 50 percent of all patients who go to doctors have emotional problems These are expressed not only in attitudes and behavior but in physical symptoms—in the heart, in the limbs, the stomach, or the aching back There are many, many evidences we live in a sick world We have hit an all-time record of crime which is costing us about ten billion dollars a year in this country We have an increasing amount of delinquency in every community in the country We know that our divorces have doubled inside of six years . . .

Mental Hygiene in the Classroom

NATURE OF MENTAL HYGIENE

These rather frightening statistics suggest that something needs to be done to minimize the acuteness of the problem and, once again, the school is elected as the agency in the best position to deal with it This is perhaps as it should be since the school gets the child rather early in

[2] The National Association for Mental Health estimates that one child in twelve will suffer a mental illness sufficiently severe to require hospitalization

life before too much harm has been done, and since the school is itself a major factor in the degree of mental health the individual attains Furthermore, the school needs to be concerned with the child's adjustment if for no other reason than that emotional disturbances will make relatively impossible the attainment of even academic goals

As an organized program, mental hygiene has three main purposes [a] the prevention of mental disorders through an understanding of the principles of adjustment, [b] the preservation and development of mental health, and [c] the removal of maladjustment by means of psychotherapy and other measures As it applies to the classroom, mental hygiene is not a matter of the teacher struggling desperately to keep children from going insane or to cure those who are already in difficulty on the contrary, mental hygiene in the classroom is a positive program oriented toward the promotion of adjustment on the part of each and every child Thus, mental hygiene is not a body of specialized procedures such as might be involved in a clinical situation but is part and parcel of the teaching process or, as stated by Redl and Wattenberg [302], the very core of good mental hygiene in schools is the way in which the learning activities are guided The same point is made by Rivlin [308] in the following quotation

> Mental hygiene is not a discrete scheme of psychiatric procedures, nor is it a distinct body of facts It is rather an attitude and a point of view that should influence everything the teacher does professionally her method of asking questions as well as her manner of accepting answers, the procedure followed in administering tests and that governing the supervision of playground activities, the appeals by which she stimulates the pupil s desire to participate in classroom activities and the measures to which she resorts to bring the unruly into line her attitude toward the asocial child such as the young thief or the bully and that toward the unsocial pupil whose timidity prevents him from mingling with others Far from being a distinct group of skills and facts, mental hygiene in the classroom takes on significance only when it is bound so inextricably with all the teacher does that careful analysis alone can reveal its exact influence There is no opposition between sound educational procedures and mental hygiene principles, both are concerned with the adjustment of the present child and of the adult he will become

Thus, the aims of education and of mental hygiene are one and the same, namely, the promotion of the all-round development of the child Mental hygiene is not a new fad, an outgrowth of a soft psychology, it

is, on the contrary, the very essence of modern educational philosophy which stresses such objectives as self-realization, happy human relationships, economic efficiency, and civic responsibility In fact, far from being a misguided fad of educationists, mental hygiene deals with the very core of human welfare and pervades all fields of human relations It is something that has always been done but which needs to be emphasized in these days of mass education and parents-in-a-hurry where no one has time to consider the child as an individual

Mental hygiene was but slowly introduced into the school This may have been partially due to the relative lack of orientation of teachers toward the clinical aspects of the child's growth and development It was no doubt directly related to the older view of the school as a place where teachers taught and pupils learned In fact, there are even today rugged individualists who object to babying the child and to the teacher having become a nurse, social worker, minister, doctor, psychiatrist, despite the fact that he is probably qualified only as a teacher Also involved is the fact that schools are always being pressured into adding extra programs and the first impulse is to resist such additions, particularly when extra cost in money and teacher time and energy is involved However, as teachers found that, in the long run, attention to the principles of mental hygiene was a wise investment from the standpoint of pupil growth as well as of teacher-satisfaction, mental hygiene became progressively more accepted although even today many teachers are operating in more or less direct defiance of its principles

If the school is to be effective in fostering the mental health of children, it is necessary that it define clearly what it can and what it cannot do Thus, the teacher needs to recognize that his training does not enable him to deal with the therapeutic or corrective aspects of mental hygiene This is one area where love and good intentions are not enough all that the teacher can do in advanced cases is to detect them to have them referred to competent authorities, and to cooperate with recommendations for treatment as they apply to the classroom Actually, the teacher's greatest contribution to the mental health of the children in his class lies in the area of good *teaching*, i e , it lies in providing individual children with meaningful experiences and opportunities for satisfying needs and in creating an atmosphere of acceptance for all children no matter what they do or who they are In other words, the teacher's greatest contribution to the mental health of the child lies in being a good teacher rather than in attempting to be a second-rate psychologist or psychiatrist It may even be that teacher-training institutions

should emphasize good teaching rather than place emphasis on mental hygiene as if it were something over and above good teaching

Teachers need to recognize that, for a number of reasons, they cannot function in the role of clinical psychologists First, whereas the clinician is dealing with only one person at a time and can, therefore, be as permissive as the occasion demands, the teacher has a class full of children and the need to be accepting and permissive with one child may be negated by the needs and rights of the other children Even though the teacher can usually build up a feeling of trust on the part of the class so that he can deal with individual children without disturbing his relationship with the group, there are limits to which one child can be a disturbing influence on the class as a whole, especially since some of the other children may also have problems of their own Furthermore, the clinician does not have such other concerns as having to grade the child to report his progress to parents, and get him ready for the next grade— all of which are likely to complicate the relationship between pupil and teacher beyond that of the clinician and patient The teacher must also accept the fact that, while the child's view of the clinician may be neutral (on par with a physician or dentist), his notion of the teacher includes a great deal of carry-over from his experiences with other teachers, much of which may be unfavorable

Whereas the teacher is not qualified to deal with the corrective aspects of mental hygiene, he needs to make it one of his primary responsibilities to acquaint himself with the symptoms of maladjustment so that he can recognize its existence early and make a referral of the child to a competent clinician Unfortunately, teachers are not too well trained in recognizing danger signals and sometimes consider as a model the quiet retiring child who never gives a bit of trouble and consider the troublemaker as ready to be institutionalized, whereas actually the former is probably in greater danger from a mental health point of view than is the latter

The relative incompetence of teachers in judging the severity from a mental-health standpoint of various behavior problems was brought out by Wickman's well-known study [417] in which he found teachers to rate fifty behavior problems in somewhat the reverse order of the ratings of trained clinicians Actually, the study contained a number of flaws and more recent and better studies have shown much closer agreement between teachers and clinicians Thus, Schrupp and Gjerde [324], in a repetition of Wickman's study using the same set of directions for both groups, found a correlation of 56 in the ratings of teachers and

clinicians (as opposed to a correlation of 04 found by Wickman)
Whether one needs to be disturbed about the discrepancy in outlook that
still exists between teachers and clinicians is a matter of opinion and
it is possible that, in view of the difference in their function, certain
differences in their views are to be expected On the other hand, there is
perhaps still a need for a further shift in teacher orientation from a
concern over breaches of classroom decorum to a more objective con-
sideration of behavior from the standpoint of the long-term development
of the whole child

MENTAL HEALTH FACTORS IN THE CLASSROOM

Since nearly all of the child's experiences during the formative years
are connected with first the home and then the school, it follows that these
two agencies are more than any other responsible for the child's (and
the adult's) mental health This has been substantiated by such studies
as that of Kaplan and O'Dea [203], the results of whose investigation of
the mental hazards of school children are listed in Table 17 1

By its very nature, the classroom incorporates many features which
may constitute definite hazards to the mental health of children—and
particularly of certain children e g , those of limited mental ability Thus,
the fact that the school has primary responsibilities in the area of pro-
moting academic learning can, unless care is exercised, mean frustration,
perhaps even continuous frustration, for some children This can be
particularly devastating to the child inasmuch as, since he cannot easily
withdraw from the situation, he may be faced with a situation very
similar to that which leads to experimental neurosis in laboratory ex-
periments On the premise that prevention is a more constructive approach
to the problem of mental health than is correction after the harm has
been done, the teacher needs, therefore, to evaluate carefully from a men-
tal hygiene point of view each and every classroom procedure The fol-
lowing is a partial list of the more obvious factors that have a direct
bearing upon the mental health of the school child

[a] The wide range of individual differences to be found in the class-
room makes it difficult for the teacher to provide meaningful experiences
for each child and to have each attain at least a minimum of satisfaction
for his needs ' This problem is, of course, accentuated by an emphasis
upon examinations and competition which may result in continuous
failure and frustration on the part of a few children Since the matter

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' For every child frustrated because the material is too difficult, there is likely
to be another frustrated because the work is obnoxiously easy, and any number of
children are bored because the material has no appeal to them

TABLE 17 1

THE MENTAL HEALTH HAZARDS OF SCHOOL CHILDREN
AS REPORTED BY TEACHERS *

Mental Health Hazard	*Percent*
Unsatisfactory home conditions	91
Failure of traditional curriculum to meet the need of many children	62
Overcrowded classrooms	51
Fear to participate orally in class due to insecurity	51
Failure of schools to realize and satisfy individual differences and achievement	50
Inadequate playground facilities	48
Failure to be accepted into desired clique	48
Parents unhappily married	44
Inability to participate in all desired school activities due to financial difficulties	44
Failure of report card to give adequate description of child's potentialities	44
Inadequate clothing and spending money	43
Lack of parental cooperation with the school	42
Labeling students as delinquents	39
Teachers using degrading remarks before other students	39
Speech impediment interfering with classroom participation	39
Conflicting personalities of pupils	39
Shyness	37

* from Kaplan and O'Dea [203]

has been discussed in a previous chapter, the student is urged to review the various solutions suggested in terms of their likely effect upon the mental health of the child Thus, in the case of examinations, a child should welcome an opportunity to evaluate where he stands—or where the group stands—as a prelude to planning the next step, but, when examinations take on the flavor of Judgment Day together with the definite possibility of being found inadequate, examinations can do far more harm from the standpoint of the child's total growth than the good, if any, which they promote from an academic point of view

[b] Discipline is a necessary aspect of growth and, as such, is part and parcel of mental hygiene Thus when approached in a con-structive way, discipline embodies the principles of mental hygiene, and hence can be an important force in promoting mental health on the part of the child Fortunately, a very definite trend has developed in recent years toward the use of more positive discipline in our schools Never-

theless, as noted in the tabulation of disciplinary measures used by some three hundred elementary teachers shown in Table 17 2 [350], some teachers in their attempt to maintain classroom discipline still resort to such potentially harmful procedures as sarcasm, ridicule, and punishment

TABLE 17 2

DISCIPLINARY MEASURES USED BY ELEMENTARY TEACHERS *

Disciplinary Measure	*Frequency*
Constructive assistance (creating opportunity for successful participation, conference with parents, special responsibility)	31%
Verbal appeal (reasoning, requested cessation)	25%
Censure (scolded, shamed, warned, embarrassed, sarcasm, soaped mouth)	11%
Deprivation (deprived recreation time, isolated, removed from class, changed seat, etc)	10%
Searched for reason for misbehavior	6%
Ignored or did nothing	5%
Overtime or extra work	5%
Other	7%

* from Slobetz [350]

While it is encouraging to note for instance, that the majority of the cases reported involved measures that are positive and sound from the standpoint of mental hygiene, the results also show that even in the middle of the twentieth century there is still an unnecessary incidence of punitive and psychologically destructive measures being used by teachers who ought to know better Note, for example, that various forms of censure were used in 11 percent of the cases In fact, a breakdown of the last category shows that physical force was used in one percent of the cases on an over-all basis which would imply that, since most teachers rarely, if ever, use force, some teachers must be placing considerable reliance upon such measures

[c] Of even greater importance than discipline from the standpoint of mental hygiene is the emotional climate of the classroom In fact, *emotional climate* is relatively synonymous with the concept of mental hygiene, once the therapeutic aspects of the latter are excluded from discussion When the atmosphere of the classroom is one of permissiveness and acceptance, the child is free to use his capacities for maximum self-realization The role of the teacher with respect to mental

hygiene is crucial for it is he who is responsible for the emotional tone of the classroom and for translating the principles of mental hygiene into effective classroom living This calls for a number of characteristics and abilities on his part, of which none is more important than that of sensitivity to the needs and feelings of others which would prevent him from subjecting the child to unfair and excessive competition, to an unsuitable curriculum, or to unrealistic demands Teachers are not qualified to treat severe adjustment problems but they can show a little understanding and friendliness to the child who is left out, who has a trying home situation, and make it possible for him to taste occasional success and recognition To do this is particularly important inasmuch as not all children can be referred to a professional counselor and many will have to rely on the teacher for whatever help he can give Furthermore, if our concern is to be with the developmental aspects of mental health, whatever help is given the vast majority of children will have to come at the hands of the teacher

[d] The academic work of the classroom should be meaningful to the child in terms of his abilities, purposes, and interests When the child finds that he can get satisfaction for his needs through doing the work of the school, he will not only be happy but he will also work as hard as his abilities permit so that there will be no need to rely on punishment, nor for the teacher to appoint himself inspector of pupil shortcomings Under these conditions, he will set his own pace and excessive pushing will only cause frustration and interfere with his growth Such a curriculum can certainly do more for the mental health and the growth of the child than any program of guidance or special help superimposed upon a rigid program of instruction supervised by inflexible and authoritarian teachers

[e] A number of other aspects of the classroom situation could be singled out for similar consideration Suffice it to say that everything the teacher does as it relates to the child—homework, grouping, reporting to parents, promoting or retaining—has implications for better or for worse from the standpoint of his mental health The teacher needs to be fully aware of the grave responsibility this places upon his shoulders

GUIDANCE IN RELATION TO MENTAL HEALTH

Guidance, mental hygiene, and, in fact education in the modern sense, all have the same purpose, namely, the promoting of the maximum self-realization of the child They differ, however in approach and in

scope Education tends to be oriented toward promoting the child's all-round growth (perhaps with special emphasis on the academic) Guidance and mental hygiene, on the other hand, function largely in the field of personal and social growth although the adjustment which they promote certainly has implications for the other phases of his over-all development From the standpoint of promoting personal and social adjustment, mental hygiene is probably more basic and generally more effective than guidance since it permeates everything that goes on in the classroom and is, therefore, likely to have a greater influence on the child than are the infrequent contacts he has with the counselor Furthermore, mental hygiene in its broad sense, includes all that is generally incorporated under guidance [4] The distinction is essentially that which distinguishes pupil-personnel work in the elementary school, where the mental health activities are integrated with the total program, from that in the high school where a formal guidance program is superimposed upon the curricular program but very often is not too closely integrated with the work of the classroom In some high schools for example, the counselor may see the student for a 15-minute interview per semester—usually more often in the case of the troublemakers—in an attempt to provide understanding and friendliness, while, all along classroom teachers continue to put through their academic paces each day some 150 students whom they barely know

It seems clear that counselors, even at best, can only be a supplement to the teacher in this matter of promoting the adjustment and growth of the children in his classes and that, at all times, the teacher will have to bear the brunt of the guidance of these children The guidance program can probably serve its best function in helping the teacher to do his job in the classroom through providing a central agency for collecting data on all children and through providing a referral service for some of the more difficult cases Unfortunately, as a part of this service, the average counselor is hardly qualified as a competent clinician, in fact, many counselors are just classroom teachers with relatively little training in psychology—a situation which can be dangerous, for, as pointed out by Woodruff [424], there are no expendable personalities to practice on by would-be counselors who, although they may feel endowed by nature with a special gift for helping others, nevertheless do not have adequate technical preparation

[4] Fenton [115] considers guidance an important subdivision of mental hygiene but points out that from the standpoint of terminology, mental hygiene is a broader term than guidance just as physical hygiene includes much more than sanitation and preventive medicine

The Mental Health of the Teacher

IMPORTANCE OF THE MENTAL HEALTH OF THE TEACHER

Whereas the focus in the modern school should be upon the child, his growth, and his adjustment—the mental health of the teacher is certainly no less important In fact, when we consider the influence from the standpoint of both adjustment and achievement he can have over a vast number of children, the adjustment of the teacher assumes even greater importance than the adjustment of any other single person in the classroom

Maladjustment is not unknown among teachers Whereas research findings vary, estimates based on such studies as those of Fenton [115] and Hicks [175] would suggest that some 20 percent of teachers in the field are in need of psychiatric help Altman [5], for instance found 4 percent of the 35 thousand New York teachers in his sample to be mental cases At the more normal level, research [175] has shown worry, disturbed sleep, shyness, indecision, absent-mindedness, fatigue and headaches to be (in order) the most frequent symptoms of nervous instability among teachers How this would compare with any other occupational group is debatable it may well be that the strain of teaching brings out neurotic trends, or that such trends in a teacher would cause alarm while the same problems in the average layman would go unnoticed or, at least, cause no apprehension Even such studies as that of Smith and Hightower [351] showing teachers with a greater incidence of neurotic symptoms than any other group of patients at the Mayo Clinic (see Fig 17 1) would have to be interpreted cautiously since the samples involved may not be representative of the various occupational groups listed

However, comparison with other groups is essentially irrelevant, the fact remains that there is a high incidence of maladjustment among teachers But whether this is a result of the strain and stress of the classroom creating an adjustment problem too severe for all but the most stable, or whether teaching attracts individuals with various forms of maladjustment has not been determined It may be, for example that teaching attracts individuals with strong feelings of hostility who see the classroom as a place where they can vent their aggressions against defenseless children and who feel that freedom to browbeat children is an aspect of academic freedom It is no doubt possible to cite examples

of persons who have gone into teaching apparently for the purpose—perhaps among others—of bossing children around or of satisfying a neurotic need to be loved

Although the evidence is not entirely clear, maladjusted teachers tend to have maladjusted pupils Boynton and his co-workers [39], for instance, found that adjusted teachers have pupils who are more stable

Occupation	N	
Teacher (female)	106	
Teacher (male)	16	
Nuns	128	
Clergymen	130	
Housewives	116	
Lawyers '	166	
Dentists	128	
Farmers	145	
Physicians	129	
Rlrd. Engineers	100	

0   10   20   30   40   50   60   70   80   90   100

Percent
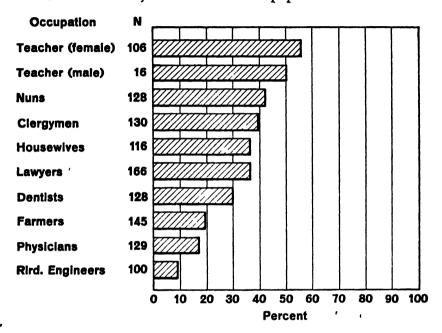
Fig 17 1 *Incidence of neurotic symptoms among patients at the Mayo Clinic After Smith and Hightower [351]*

than do teachers who are considered maladjusted Similar results were obtained by Baxter [24] And, of course, the average person can recall instances of a frustrated teacher who had negative effects upon students who, in turn, vented their annoyance by making it miserable for him, thereby complicating his adjustment problems The very strong stand against the presence of maladjusted teachers in the classroom taken by the American Association of School Administrators is reflected in the following quotation from their 1942 yearbook [6]

the emotionally unstable teacher exerts such a detrimental influence on children that she should not be allowed to remain in the classroom Such teachers need help, but while they are being helped they should be out of classrooms so their pupils may be freed from the psychic injury, repression, and fear which their presence creates

On the other hand, the fact that Ash [13] found no correlation between the teacher's adjustment and the emotional and social behavior of his pupils may suggest that the important thing is not the teacher's adjustment but rather the way it is reflected in his behavior as it affects children It may even be that a teacher aware of his own problems may be more sympathetic and sensitive to those of his pupils Furthermore, since other factors affect the stability of children, it is not fair to blame the teacher's lack of adjustment for all of their problems Nonetheless, it is true that some teachers have their hands so full of their own troubles that they cannot be expected to work effectively in guiding the growth of their pupils It takes but one or two on the faculty of any school to scuttle, in effect, the mental hygiene program of the school the harm done by a few teachers who are more suited to be recipients than givers of guidance is often as irreparable as it is inexcusable Teachers whose maladjustment is reflected in their being bossy, often cross, always fussy, and given to nagging and antagonizing children just cannot inspire them to do their best

Thus, the mental health of the teacher is directly related to the work of the classroom Whereas the plumber can be most maladjusted without it having too much effect on his customers, the maladjustment of the teacher is very likely to affect in a very vital way the growth of the children in his care Hence, good mental health on the part of the teacher should generally be as important a qualification as academic knowledge or a valid teacher's license This would be of particular importance in the grade school where children may be stuck with the same teacher day in and day out for a whole year

FACTORS IN THE MENTAL HEALTH OF THE TEACHER

Much of the material of this text has direct bearing on the mental health of the teacher and he should be able to apply the principles we have discussed to his situation as well as to that of his pupils Thus, for example, he needs to appreciate the fact that, like any other human being, he must derive certain satisfactions from his job if he is to remain a contented and integrated individual, and that he is not promoting his own adjustment nor that of his pupils when he attempts to satisfy his needs at the expense of the children in his class

Teaching, like any other profession, involves both favorable and unfavorable mental hygiene factors Among the former we might mention the following

[a] Teaching includes ample possibilities for satisfying the needs of the teacher The teacher doing a good job has the satisfaction of seeing

children grow, of feeling their affection and respect, and of obtaining recognition by parents and the community This is probably the greatest satisfaction to be derived from teaching But it tends to be restricted to those who enjoy their teaching sufficiently to be good teachers The poor teacher very often reaps nothing but pupil and parental hostility, if not contempt

Teaching involves a variety of work and a constant challenge for the person who is interested in children and their growth Every child is unique and presents unique problems that call for the highest level of professional competence Although the teacher will not always be successful in solving these problems, there will certainly be no lack of opportunity to use all of his skills, initiative, and ingenuity for the benefit of children and his own self-satisfaction When the teacher becomes sensitive to the needs of children and attempts to make the classroom a pleasant place for them, he soon finds that they, in turn, help satisfy his needs, so that teaching becomes rewarding

[b] Teaching offers steady employment with rather good pay, steady increases, a reasonably short day, and numerous vacations throughout the year This advantage is, of course, lost when teachers become straddled with heavy co-curricular responsibilities, when they have to attend university classes, or when they feel compelled to take on an extra job to supplement their salary

[c] Among other advantages might be mentioned association with educated persons of like interests, clean work, and contact with youth whose enthusiasm and vitality will never let the teacher grow old— unless he grows sour—in which case, it will be remarkably effective in hastening the process   ·

But there is an unfavorable side to teaching

[a] For some teachers, the major hazard in teaching is monotony Using the same methods, the same outlines, the same illustrations, the same audio-visual aids, eating the same meals at the same restaurant, wearing the same style of clothes—all of these things down to the same bridge partners every Friday and the same pew in church every Sunday are typical of the lives of some teachers They are in a rut! Presenting the same material year after year—and repeating it for the benefit of the slower children for good measure—is bound to get boring It is like presenting the same play over and over again Actually, *good teaching* can never be routine it calls for improvement in method, for changes in content depending on the interests, needs and purposes of the children, and, above all, it calls for teaching *children,* and not *subject matter* On the other hand, it is true that teaching is sometimes frustrating because

the results of one's work are not immediately observable This is especially so in the area of pupil adjustment where a teacher may work for months—apparently in vain—trying to straighten out a child It is also true that some teachers by trying too hard and expecting too much disappoint themselves and become discouraged

[b] Teaching can involve a great deal of nervous strain Not only are numerous emotionally charged situations likely to occur during the course of the day, but, even at best, children are full of pep and vinegar and they can be irritating even to the calmest teacher When the teacher is unstable to begin with, the strain on teacher and pupils alike can become unbearable Such a teacher should probably be guided out of the profession, whenever possible

The teacher needs time to collect his wits and his energy A free period when he can take a minute to relax without having children under foot, perhaps time for a cup of coffee on days that have been particularly trying will often do wonders in terms of setting the ship back on an even keel Teaching may actually involve considerable fatigue on the part of the teacher depending on the size of the classes taught, the nature of the pupils and of the subject taught, and, of course, the physical stamina of the teacher Teachers, especially those in the smaller schools, are often loaded down with co-curricular assignments, committee meetings, various other assignments, unending reports and other clerical—if not janitorial —duties in addition, of course, to a full teaching load Thus, to quote Bowlby [37] •

.   the problem of extracurricular duties is really enough to take your time, your health, and your breath away Every teacher is expected to serve as a class advisor as well as sponsor two or more activities, plus a little coaching or dramatic work on the side Three-in-one oil is modest in its numerical claims when compared to the small-high-school teacher who is expected to be a seven-in-one paragon—guidance expert, advisor, teacher, clerk, and assistant janitor, plus football and basketball coach

Likewise, in the Kaplan and O'Dea study [203], the results of which are shown below, many of the mental hazards listed by teachers are in the category of unsatisfactory work conditions Yet generally it is the frustration resulting from things undone and problems unsolved as well as from boredom, rather than good hard work, that leads to fatigue Once the strain starts to accumulate, tension piles up and teachers get to nagging, overemphasize the unimportant and the trivial, and become

unable to organize their work on an effective basis The result is general annoyance and shortness of temper which soon leads to animosity on the part of pupils and, thus, to a vicious cycle

TABLE 17 3

MENTAL HEALTH HAZARDS OF CLASSROOM TEACHERS *

Mental Health Hazard	*Frequency*
Teacher load too heavy	64%
Overcrowded classrooms	51%
Inadequate housing	50%
University work carried concurrently with teaching	49%
Failure of report card to give adequate description of child's potentialities	48%
Lack of parental cooperation with the school	44%
Teachers performing secretarial duties	42%
Insufficient supplies and equipment	40%
Failure of school to realize and satisfy individual differences	39%
Lack of school funds to operate efficiently	37%

* from Kaplan and O Dea [203]

[c] Closely connected with the matter of nervous strain as an unfavorable feature of teaching are the frequent conflicts that arise during a school day The maintenance of discipline, for example, often poses a problem for the teacher who wants to be loved and appreciated and yet does not know how to be permissive without having students take advantage of him He may feel that he has to choose between bedlam and resulting censure from the principal, or autocratic control and pupil antagonism Of course, such things as defiance and hostility on the part of students are much more common in some communities and at certain grade levels than others, but again it seems that some teachers are always running from one conflict to another while others never have trouble When such conflicts occur too frequently, the teacher might well ask himself whether he is bringing these problems upon himself by such things as rigidity of personality or insensitivity and incompetence in adjusting the curriculum to the needs and purposes of the pupils On the other hand, teachers sometimes run into a problem when their need to be loved and to avoid pupil hostility makes it difficult for them to maintain discipline and insist on a certain amount of work This often leads them to compromise some of their values with resulting feelings of guilt and anxiety

Generally, when a relationship of mutual understanding exists be-

tween teacher and pupils, when the teacher has earned the respect of students and they are convinced that he has their interests and welfare at heart, such conflicts are likely to be rare and of a minor variety, especially when he is proficient in adapting the curriculum to student needs and purposes He must also give the child feelings of status and recognition and thus make it unnecessary for the latter to become a behavior problem in order to get attention He should be sure to provide legitimate outlets for the release of emotional tension so that it is drained off before it reaches explosive proportions

The teacher needs to understand not only children and what causes them to behave as they do but he also needs to understand his own behavior The secure teacher should be able to accept defiance and other irritations without being unduly upset and certainly a teacher who enjoys children can understand that their buoyancy and high vitality is bound to get them in trouble once in a while Therefore, when he finds himself unduly provoked at the child's behavior, he might well ask himself what in his background causes him to be so disturbed at this kind of behavior

Some teachers feel that the way to handle conflicts with students is to point out in no uncertain terms who is boss Unfortunately, this generally restores order and it gives the teacher the illusion that he has solved the problem whereas, in reality, he has only dealt with superficial behavior and actually aggravated the problem through increasing inner tensions and frustrations of which the misbehavior is but a symptom In general, tough disciplinarians create more problems than they solve by increasing resentment and hostility they create misconduct while, at the same time, causing conflict and maladjustment on the part of the child Such conduct also precludes the building of respect and acceptance on the part of pupils and denies teachers the satisfactions they so definitely need In short order, besieged by pupil and parental hostility and rejection, such teachers are forced to depend more and more on autocratic control and punitive measures which, sooner or later, rebound against them

Conflicts also arise out of poor teacher-principal relationships Just as some teachers are misguided in their dealings with pupils, so some principals and administrators consider pupils and teachers as mere cogs in the pedagogical machine And just as children suffer from repressive autocratic control at the hand of teachers, so do teachers often suffer from the same sort of control at the hands of the administration Many teachers feel they are forced to contend with unrealistic standards, rigid requirements, and petty politics They sometimes feel that they are prevented from doing their best for the child by administrative restrictions

oversize classes, constant interruptions, and endless clerical details Some principals have outdated ideas as to such things as classroom management and expect teachers—who feel they know better—to act accordingly And, of course, conflicts arise from the opposite situation, e g, when the teacher, exasperated at the behavior of a youngster, sends him to the principal only to be told by the latter that perhaps if he were a little more understanding of children he would have fewer problems

The communication system between teachers and administrators sometimes breaks down to the point where, while each blames and complains about the other, they never get to dealing constructively with their differences Teachers often complain about the principal to each other but in front of him blame the pupils and the parents In the meantime, the frustration and hostility of both the principal and, especially, the teacher are directed toward the child as the scapegoat in the situation, while apathy and poor school morale bounce from teacher to pupil and back again 'The emotional as well as the academic tone of the school—and eventually of the classroom—revolve around the work of the principal However, his responsibilities cause him to be interested in the whole school rather than in individual teachers and occasionally the teacher may feel cheated out of deserved recognition, especially when favoritism and petty politics are present

Conflicts also arise when parents do not see eye to eye with the teacher on such matters as discipline, homework, curriculum, or teaching methods Parental and community reactions sometimes pick up momentum and concentrated attacks, such as the recent wave of criticism of the school stemming from American lag in the missile race, result The poor teacher often finds it difficult to agree simultaneously with the mother of the gifted child who wants rigid grading and a highly technical curriculum and with the mother of the duller child who has a different problem, or with the mother of the well-behaved child whose jacket was torn by one of the more uncontrollable children of the school and with the mother of the latter child, with the parent who wants more homework and the parent who wants less—all of which he is expected to do while at the same time complying with administrative regulations on the subject Pressures are even applied to win sports events whatever the cost in terms of harm to individual children and of the violation of the teacher's basic values of sportsmanship It must be noted in this connection that the parent is generally well-meaning, he simply wants the best for his child, a reaction which is both understandable and commendable, and the parent may be right except that his child is only one of the thirty or more with whom the teacher has to contend¹ At any rate, all these

demands made upon him to be everything to everybody at once leaves the poor teacher confused and often demoralized And, unfortunately, the same lack of communication that sometimes characterizes teacher-principal relationships is also to be found at times in the dealings of teachers and parents so that the teacher may feel "without a friend in the world "

[d] A fourth source of difficulty connected with teaching which is, fortunately, being relaxed in recent years concerns the isolation of the teacher resulting from unnecessary community restrictions on his personal life That the imposition of a few restrictions is psychologically sound has been mentioned before Teachers have by their own choice set themselves in a position where children are likely to identify with them, where they become their heroes to be copied They can, therefore, not allow themselves to become involved in scandals or even minor episodes that might go relatively unnoticed in a lesser position If a teacher is not willing to accept the fact that his life is not his to live after school hours, he is in the wrong field For the clergyman, the mayor, the principal, or any other person in a position of public responsibility to be found drunk in the gutter is not "his own business"!

Nevertheless, certain restrictions are unnecessary the community cannot put restrictions on such things as smoking, participation in civic groups courtship and marriage, and other activities to which the teacher, as a member of a democratic community, is entitled, without in the long run destroying his effectiveness In some communities, for example, the teacher—and particularly, the woman teacher—is never fully accepted on an equal basis by parents and other adults and, even in social situations, she is not Jane Smith but *Miss* Smith, Joan's teacher The community often places her on a pedestal and, thereby, denies her such basic rights as the right to innocent fun, courtship, and privacy Many women teachers, for instance, are rather frustrated at the thought of becoming "old maids,' for not only do they find the male teachers with whom they associate in the school to be married but they are also restricted in husband-hunting in the community Perhaps all these restrictions are a carry-over from the mixed feelings about teachers which a number of people carry with them from their school days but, whatever the reason, they make it difficult for the teacher to lead a normal life and enjoy the satisfactions of the usual social contacts These restrictions are, of course, more rigid in small communities than in large cities where the teacher may be residing in an entirely different section than that in which he teaches The solution probably lies in the direction of having the teacher convince himself of his rights as a citizen and his duty as a public servant and leader of youth and to insist on these rights—pro-

vided, of course, these rights do not interfere with his responsibility as a teacher It might, for instance, be pointed out that taking sides in a controversial issue, regardless of the merits of the teacher's stand, might easily jeopardize his effectiveness with a certain group of pupils (and their parents) who have deep-seated convictions from the opposite viewpoint The question of racial integration might be an illustration of this point

[e] Salary is also a point of contention for some teachers, although generally the salary issue comes up only when morale is low and other grievances are present Thus, some teachers sometimes feel that they are not understood and appreciated, that there are no extra rewards for effort and effectiveness, that all the administration and the community does is pile them with extra choices but never a word of recognition Some teachers may feel that lack of professional help in the form of academic consultants and clinically trained workers, forces them to struggle with problems they are not able to solve Thus, the question of low salary is generally tied to a general discontent and, often to lack of adjustment on the part of the teacher to teaching as a career

The salary of teachers does not compare with that of other professions like medicine, dentistry, law, or engineering, but it is reasonably free from operating expenses and is not subject to risk Besides salaries have come up and will maintain this rise as teachers continue to provide competent professional service Teachers must remember that they are in the profession to provide a service, not to get out of it all the traffic will bear If a teacher feels that he is underpaid, such a feeling is likely to lead to frustration, to a lack of enthusiasm and initiative which can do great harm if transmitted to children and, by preventing him from doing his best job, engenders endless difficulties and frustrations For that reason an underpaid teacher is rarely worth what he is getting and for the good of all, including himself, he should look for a position elsewhere Teaching has certain attractions and certain drawbacks and it draws a particular group of people who are content to operate within such a framework A person who is not happy to work under these conditions owes it to all concerned to get out The welfare of children is at stake

Suggestions for Promoting the Mental Health of the Teacher

Teaching is not without its mental health hazards which, as we have seen, take their toll among teachers The fact that some teachers and not others display signs of maladjustment, however, apparently points to differences either in the stability of teachers as they enter the pro-

fession or in the conditions which they encounter after they become teachers The two sets of factors are, of course, closely interrelated well-adjusted beginning teachers are likely to deal with whatever conditions they encounter with effectiveness and improve them The unstable teacher is likely to find himself in the middle of a vicious circle, for the un-favorable factors involved in teaching are magnified in the case of the unfit, with resulting harm to himself as well as to children

The writer is fully convinced that the most effective way of im-proving the mental health of the teaching profession (and succeeding generations of youngsters) is to select as prospective teachers individuals who are emotionally stable and who go into teaching because of an interest and a mature liking for children This places a great responsi-bility upon the shoulders of teacher-training institutions, especially since the factors that are involved in teacher-success are not only relatively unknown—in the 143 studies of effective teachers summarized by Barr [22], no single teacher characteristic or factor stands out—but also rela-tively difficult to appraise Nevertheless, from a psychological standpoint, the following teacher characteristics and qualities may be considered as conducive to effectiveness in promoting mental health on the part of the child [a] emotional security, stability, and relative freedom from anx-iety, [b] ability to identify with children and include them within their sphere of enlightened self-interest as discussed in Chapter 5, [c] a co-operative democratic orientation, and [d] a balanced and positive out-look on life · Appraising the presence of these traits in prospective teach-ers is obviously difficult in the setting of the usual lecture-type college classroom situation An approach that combines classroom participation, pre-internship contacts with children in the field, and the use of such standardized instruments as the Minnesota Teacher Attitude Inventory [76] and even the Minnesota Multiphasic Personality Inventory [169] as a means of determining suitability for teaching tend to be more fruit-ful but even then we can more successfully identify those individuals whose characteristics will tend to prevent them from becoming good teachers than those who will be successful Thus, such procedures and instruments may permit the identification of teacher candidates who are so engrossed in their own difficulties that they are not likely to be in any position to understand and help children with the problems of grow-ing up On the other hand, the relative absence of negative traits does not automatically guarantee success in teaching

The principal has a particular responsibility·not only in choosing good teachers for his school but also in promoting and maintaining morale

and school efficiency at a high level, for, just as the teacher sets the
tone of the classroom, so in a more general way the principal sets the
tone for the school Implied in the above statement are [a] a democratic
organization and operation of the school, including a discussion (and
not a dictation) of policies, constructive supervision, and group action on
school problems, [b] adequate salaries, equipment, and other facilities
that befit the dignity of the teaching profession, and [c] cordial relations
among administrators, teachers, pupils, and parents, each aware of his
responsibilities and of the need for cooperation

The teacher himself has the primary responsibility for his own mental
health Granted a liking for children, he still needs to acquaint himself
with the principles of psychology so that he can understand children bet-
ter He must be fully sold on teaching as an opportunity to be of service
to children and must be fully convinced that whatever promotes their
adjustment will also be conducive to his own happiness and mental health
In fact, he should concentrate on developing positive relationships with
pupils, fellow teachers, parents, and administrators through developing
sensitivity to the needs of people and resourcefulness in dealing effec-
tively with others He also needs to understand and accept himself, for
only as he has accepted his own shortcomings is he in a position to accept
those of others Furthermore, since competence is conducive to a feeling
of security, he should strive to develop competence in both his subject
area and in teaching methods so that he can guide more effectively the
growth of children along worthwhile and meaningful lines Nothing gives
a teacher a lift as much as does pride and confidence in his ability to do
the job and to earn the respect and gratitude of pupils, parents, fellow-
teachers, and administrators

As he grows in ability to consolidate children into a functional cohe-
sive group bent on the pursuit of common goals, he finds troubles dis-
appear Furthermore, as he grows in security, he finds it easier to be
tolerant, to look upon annoying behavior on the part of others as some-
thing to analyze from the standpoint of causation rather than as a per-
sonal affront Then the child's misbehavior becomes a challenge just as
the principal's criticisms serve as the basis for improvement rather than
as a cause for resentment Under such conditions he can see things in per-
spective, he can distinguish the important from the trivial and petty, he
needs no longer to be on the defensive Furthermore, as he becomes freed
from having to worry about his security, he finds more time to plan, to
routinize what should be on a routine basis, and thus, he preserves his
energies for constructing more meaningful classroom experiences.

The teacher should cultivate wide interests and associate with people outside the narrow circle of the classroom so that he does not have to be so dependent upon his students for the satisfaction of his needs He can then be more objective in dealing with students and be of greater help to them [5] He should also be aware that all work and no play makes Jack a dull boy and should have separate time for both This is particularly true of the woman teacher with a family who, unless she plans it carefully, may find that her attempt to be a wife, a mother, and a teacher will result in her being a failure in all three The teacher needs to keep in good physical health and, although some teachers, perhaps because of their relative freedom from unnecessary tension and their ability to put work on an efficient basis, seem full of energy, others definitely need their weekends and their vacations to recuperate It follows that the teacher should not take pupil assignments home to grade unless he is sure there is no better way and that the time and energy so spent could not be put to more constructive use This is not to be construed as an endorsement of laziness the writer is merely suggesting that the effectiveness of a teacher is probably more closely proportional to the planning and the imagination he brings to the classroom than to the number of hours he keeps his nose to the grindstone [6]

Yet, despite all the constructive planning of which the teacher is capable, there will be days when everything will go wrong, when he will feel like crawling in a hole in the ground If this occurs frequently, he might well be in the wrong field and, despite all the glory that attends the virtue of persistence, it is an even greater virtue to know when to quit Yet, he shouldn't waste every ounce of the energy he should be spending in teaching worrying about his effectiveness He should do the best job he can—and let us not forget the words of Redl and Wattenberg [410]

> There are not enough saints to fill all the teaching positions, so imperfect human beings must do the bulk of the instruction of youth— What counts is not your virtues or your vices but what you do to children with them

[5] In order for clinicians to be of maximum service to their clients they must maintain with them a relationship that is professional, not personal To some extent, this also applies to teachers they should not get so involved in the children that they carry the burden of the children's problems on their own shoulders

[6] The teacher needs to take periodic appraisal of the value of what he is doing in terms of his goal, namely, pupil growth Are the hours spent with a red pencil actually helping the child with his English? Is talking on the part of the child so bad? Teachers often get too busy to stop and consider whether there might not be an easier and more effective way of doing things

HIGHLIGHTS OF THE CHAPTER

Mental illness is America's number one health problem today For-
tunately, it has received considerable attention in recent years in both
lay and professional circles and extensive research into the cause and
cure of mental disorders is being conducted Nevertheless, it is probably
true that no other institution is in as good a position to deal with the
problem as is the school   not only does it have contact with the child
from early in life through the formative years but, since so much of the
child's life centers around the work of the school, his school experiences
are bound to have a profound influence upon his mental health   The fol-
lowing are among the more important concepts of mental health as they
apply to the classroom

[a] Mental hygiene in the classroom is not a fad nor a body of
clinical techniques, on the contrary, it is part-and-parcel of the teaching
process by means of which the child's maximum self-realization is pro-
moted

[b] Mental hygiene has three main purposes [1] the prevention of
mental illness [2] the development of mental health, and [3] the cor-
rection of mental disorders

[c] It is by means of good teaching that the teacher can do most
to promote the mental health of the child   Because of the nature of the
situation in which the teacher operates and the nature of the training he
has received, his efforts in the direction of the therapeutic aspects of
mental hygiene should be restricted to early detection of danger signs, to
referral to a competent clinician, and to cooperation with his recom-
mendations

[d] A number of factors in the classroom constitute potential mental
health hazards   Among these might be mentioned the demands of the
curriculum, discipline, the emotional climate of the classroom, examina-
tions, and reporting

[e] Regardless of the availability of clinical and guidance services,
the brunt of the guidance of the child and the promotion of his mental
health will have to be borne by the classroom teacher

[f] The mental health of the teacher is of primary importance in
view of the effect his personality can have upon a large number of chil-
dren   Unfortunately, research has shown considerable maladjustment

among teachers and, although the same can be said about any other occupational group, maladjustment among teachers is more closely related to their work than is the case in other occupations

[g] Teaching, just as other occupations, has both its favorable and its unfavorable features and it usually attracts persons who can find happiness within such a framework For the right person, teaching can be a source of satisfaction and self-fulfillment whereas for the misfit the satisfactions are minimized and the drawbacks are correspondingly magnified The latter should be guided out of the teaching profession for the good of all concerned

[h] The most effective way of improving the mental health of the teaching profession is to select, as prospective teachers, individuals who are well adjusted and who have a mature liking for children

[i] Administrators need to do all they can to make the work of the classroom teacher pleasant In the final analysis, however, the teacher needs to assume responsibility for his own mental health, to attempt to understand and accept himself, to develop competence in dealing with children, and to cultivate a sense of perspective that will prevent him from becoming unduly upset at minor irritations

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QUESTIONS AND PROJECTS

1 Comment A teacher objects to having to concern himself with the mental health of 150 children whom he barely knows He contends it detracts from the primary function of the school, namely, to teach Anyway, he is trained as a teacher not as a psychologist

2 Evaluate the school from which you graduated from the standpoint of its provisions for the mental health of pupils and teachers What are some of the features that could have been improved?

3 What are the particular satisfactions you anticipated which caused you to select teaching as a career? Why the particular field of teaching rather than another?

4 Debate Until such time as the teaching profession implements effective means of eliminating from its ranks the misfit and the maladjusted, it should not be given security of tenure

5 Is the teacher's welfare compatible with the best interests of the students and the community? Should teachers join teacher federations?

18

The Modern Classroom—
A Psychological Reorientation

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*To say that the football team and the band 'appeal to youth"
more than history and mathematics is no explanation at all The
football team and the band are organized to have a powerful
human appeal, whereas history and mathematics are not so or-
ganized although they could and should be*

<div align="right">MURSELL [278]</div>

A COURSE IN EDUCATIONAL PSYCHOLOGY can be justified as part of the
teacher-preparation sequence only as it leads to an improvement in the
effectiveness with which the teacher carries out the work of promoting
the growth and development of the child Throughout the chapters of
this text, various psychological principles have been considered against
the background of the work of the classroom This chapter will attempt
to pinpoint some of the more important applications and implications of
these principles particularly as they relate to the organization of educa-
tional experiences by means of which the maximum self-realization of the
whole child is to be promoted The student must not expect prescriptions
and rules of thumb this book promised none, will give none! Further-
more, it must be understood that the present chapter makes no claim to a
complete coverage of the implications of psychology for educational

practice The discussion will be restricted to a few of the highlights and the student is urged to review the material covered in the various chapters not as something to learn for a final examination but rather as a foundation upon which educational practice must be based

Organizing Meaningful Classroom Experiences

INEFFICIENCY IN THE SCHOOL

Education has undergone drastic changes since the turn of the century Great progress in both educational thought and educational practice has resulted from such influences as [a] the contribution of educational psychology, especially in the area of a greater understanding of the nature of the learner and of the learning process, and [b] sociological changes leading to a new concept of the role of the school in modern democratic society The net results, although not amenable to a succinct synthesis, are probably best reflected in the reorientation of educational practice toward the all-around growth of the child as opposed to an emphasis on any given aspect at the expense of the others as was characteristic of the school of yesteryear What is more, modern schools—and modern teachers—here and there throughout the country not only exemplify the latest philosophical and psychological thinking put into practice but also earn public recognition and respect through the caliber of the services they provide and of the product they turn out

Yet along side this modernism that characterizes certain schools and certain teachers, there exist throughout our country, schools and teachers whose Rip Van Wrinkle organization and procedures are not only woefully ineffective but—worse—are definitely detrimental to the all-around growth of the unfortunate children who are subjected to their influence

Ironically, much of the harm done children comes at the hands of teachers and administrators whose sincerity cannot be doubted—who are fully convinced that they are acting in the child's best interest—but whose lack of understanding of the basic principles of psychology and of education makes them, nonetheless—and no less—an undeniable hazard to the maximum self-realization of countless children Thus, daily, well-meaning teachers force children to participate in exercises in which they have no interest, push children to do things which are completely beyond their abilities, who berate, scold, nag, and fail them because students cannot meet their unrealistic standards, and who punish them when, in final desperation at this constant frustration of their needs, chil-

dren misbehave All this, because of a firm belief that hard work is good for anyone and that "if they tried hard enough, they could do it" Anyway, the content of the curriculum has to be covered—regardless of the cost! These teachers are apparently unfamiliar with such fundamental psychological concepts as the difficulties imposed by intellectual and experiential limitations, the complications caused by emotional blocking, and the negative attitudes that result from coercion, to name but a few

In the same way, many teachers (perhaps not entirely well-meaning) are apparently under the impression that, unless children are driven with a whip like tigers in a circus act, the quality of their performance will be impaired, and that children will neither work nor behave unless kept under the constant threat of failure and punishment So they would never think of giving a compliment for work well done for fear the child will immediately rest on his laurels, but, on the other hand, they never miss an opportunity to criticize (presumably, as a way of building moral fiber and a striving for perfection) And the sad part is that these teachers feel they are doing their duty That they might accomplish more by trying to understand the child and his problems and by encouraging him to do his best than by trying to crush him and to downgrade his self-concept, it seems hasn't dawned on them! [1]

Paralleling these inexcusable violations of the principles of educational psychology—or perhaps, more correctly *because* of this failure on the part of certain teachers, who are supposedly psychologically trained persons, to comply with the principles of educational psychology in dealing with the child—our schools have not been overly successful in promoting his growth As we have seen in the chapters on adjustment and mental health as well as in the discussion of social and emotional maturity and the concept of enlightened self-interest, the products being turned out of our educational institutions considered as a whole fall considerably short of perfection However, since the school cannot be expected to shoulder the whole blame for failure in these areas we may more appropriately evaluate the extent of its relative success in promoting academic growth since this is one area where whatever credit or blame is due can, to a greater extent, be attributed to the efforts of the school

Empirical evidence points rather conclusively to the fact that, no matter from what point of view we look at the work being done in the classroom, we invariably find little cause for rejoicing This, of course, does not pertain to all teachers, or even to all schools, for some are doing

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[1] Perhaps the principal could bring the idea home by taking every opportunity to tell them what poor teachers they are, individually and collectively •

an outstanding job it does, however, apply to the majority and this is the standard by which parents and the general public measure our worth Many critics have lambasted our educational institutions for their ineptitude and, whereas these criticisms are not always completely warranted, they are, nevertheless, not entirely without foundation In fact, even such objective observers as Mursell [278] and Burton [53] mince no words in pointing out that our efforts have been anything but successful Thus, Mursell not only gives examples of teaching in direct violation of the principles of educational psychology but goes on to say that these examples are, unfortunately typical of many of our present educational practices

Among the many examples of inefficiency and malpractice in the classroom which can be noted by any impartial observer who looks into the problem, one might mention the following

[a] Much of the activities of the classroom consists of verbal discussions and descriptions with a heavy reliance on abstract and technical language The logical outcome in too many cases is verbalism piled on verbalism, frustration, gradual disinterest, apathy, and misbehavior Thus, the child's knowledge of grammar does not lead to an improvement in his oral and written work, the teaching of science is often formalized and systematized into intellectual units which have no relation to his daily experience and interest, mathematics is rarely brought down to the level at which he can understand it let alone use it in living, and social studies are often taught in the abstract so that it is completely foreign to the problems he faces in everyday life

[b] The unsuitable curriculum which dominates some of our schools interferes with promotion of the maximum self-realization of the child both directly through the nature of the learning experiences it contains and indirectly through the shackling of the teacher and the consequent encouragement of ineffective teaching methods The curriculum in the great majority of our schools is a subject curriculum, in many cases, according to Burton, it is a textbook curriculum tragically unrelated to life needs" not only for children but also for adults, ' for immediate and remote needs of anyone, anywhere, at any time " Under such conditions there can be no good teaching Page assignments to a single text followed by a verbal quiz and drill aimed at the memorization of facts [2]— with no other aim than covering the text—is used by the "great majority" of secondary school teachers even though, again to quote Burton,

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[2] Many teachers of the traditional school prefer routine, busy work, and the memorization of facts This system calls for little imagination, it is easier to enforce through drill, and easier to measure from the standpoint of outcomes

"It would be difficult to devise an educational practice so grossly ineffective, so certainly calculated to interfere with learning " Many of our schools still rely on such potentially damaging measures as coercion competition, and punishment as a means of pushing meaningless material on defenseless children As a result, the things that stand out in too many of our schools are lack of motivation, satisfaction with mediocrity and getting by, a great interest in "cinch' courses, and 'goofing-off '

Schools exist for the purpose of providing meaningful experiences through which the growth of the child can be promoted most effectively No one denies the fact that the child can—and does—learn many useful and important things out of school However, such out-of-school experiences tend to be haphazard, uncoordinated, and not sufficiently organized and concentrated for society to be able to depend upon them for educating the child School cannot be like life it is precisely because of the failure of ordinary life experiences to provide a suitable education that schools have been established Schools exist for the purpose of selecting those experiences that are worthwhile and meaningful to the child, of bringing them into vital relationship with him so that he can integrate them in a functional way, and guiding him in his reactions to these experiences so that they will be effective from an educational point of view

THE CURRICULUM

The sequence of experiences through which the school attempts to promote the growth of the child is known as the curriculum Ideally, the curriculum should incorporate the best experiences one could devise to further his growth and development and its importance in the promotion of this growth can, therefore, not be minimized In fact, a poor curriculum (in the sense of emphasizing the unimportant at the expense of the essentials, of emphasizing the unattainable and the useless of being unrealistic) would automatically negate the very purpose for which the school exists

Most, if not all, experiences are educative in the broad sense of the word However, some experiences even though educative, are detrimental from the standpoint of long-term growth of the learner Also to be considered is the fact that a great many experiences which are educative in the beneficial sense can be found and that if time were unlimited, the child could become educated by simply being exposed to them all—or at least to a large proportion of them But time is not unlimited and the school, if it is to fulfill its responsibility to society, must choose among the many experiences to which the child could be subjected those that are likely to result in the maximum growth at the minimum expense in

terms of his time and effort Just what these experiences are is, of course, a matter of considerable disagreement

The experiences incorporated into the curriculum are simply the vehicle through which desirable learning takes place and it is the learning that counts rather than the experience through which it is achieved Yet, for all the talk about teaching the child (and not subject-matter), it is still a psychological fact that children learn only through the medium of subject-matter, i e , through the experiences to which they have reacted, for learning takes place as a result of the learner s responses and the latter occur only as a result of stimulation Thus, subject matter is incidental to learning and the study of history or algebra is worthwhile to the child only to the extent to which it enables him to do something which is purposeful to him The question is not one of teaching the child algebra or any other subject but rather of choosing the sequence of experiences that will promote in the most effective way the learning he needs for self-realization In this area, the science of psychology can make a definite contribution

What to include in the curriculum is first of all a problem of educational philosophy as we have pointed out in Chapter 1 Educational psychology also has a definite role to play in determining this curriculum whether or not Latin or physical education should be emphasized in our schools, for example, centers around the extent to which the disciplinary and direct values of each in promoting child growth are greater than those of other experiences competing for inclusion in the curriculum Likewise, whether the curriculum should be oriented toward the more formal aspects or those more closely related to the child's experience cannot be considered apart from the effectiveness with which such learnings can take place

Generally speaking, the long term goals of education, e g , ability to think clearly, a scientific attitude, tolerance, and social competence are a matter of educational philosophy On the other hand, the more immediate goals and the means whereby both short- and long-range goals are attained are more properly the province of educational psychology Thus, whether the teacher conducts a unit on sanitation, transportation, or city government as a means of promoting learning in the area of number work, reading comprehension, or civic responsibility is probably best decided on the basis of psychological rather than philosophical considerations simply because the extent to which an experience is truly educative depends upon such psychological factors as the child's interest, goals, and needs Likewise, if one has to choose between two equally important

goals to be achieved through the curriculum, preference might be given to the one which, according to the principles of educational psychology is relatively more attainable or functional—or both

The school must constantly re-evaluate not only its methods but also its curriculum in the light of changing social and philosophical thought and especially in the light of new discoveries in the area of educational psychology On the other hand, it must not initiate changes simply for the sake of change Teachers are not believers in doing things by halves when convinced that a suggested procedure is better than a present one they are likely to make a complete shift without realizing that perhaps the solution lies in a middle-of-the-road position—and educational procedures have a long history of pendulumlike shifts over the years—from a completely phonetic approach to a total disregard for phonics, from rigid drill procedures to an easygoing curriculum dictated by the whims and fancies of immature children, from a rigid teacher-controlled classroom atmosphere to a pupil-dominated state of classroom disorganization

Some of these changes have come in response to the demands of the public that certain courses be offered in the school (e g , sex education) or that a greater or lesser emphasis be placed on a certain phase of the curriculum because of its alleged importance or unimportance Thus, statistics on the physical inadequacies of the American youth inducted into service during World War II led to an increased emphasis on physical education in schools only to have it cede to science and mathematics as a result of the clamor of scientists that accompanied the Russian Sputnik Generally, Americans consider themselves practical and, in contrast to the European idea of the finishing school and the gentleman scholar, tend to emphasize the practical and even the vocational as opposed to the cultural and the theoretical Likewise, there tends to be a more or less persistent demand for the specific and the tangible as opposed to the general—a trend which has met with considerable favor among harried teachers eager to meet the demands of still another emphasis in American education, namely, adequate objective performance on various tests of academic achievement

Some of the demands made upon the school have come from professional educators and psychologists and have been based on sound research evidence Thus, a greater emphasis on the "life adjustment" curriculum more closely related to the everyday life of citizens in a democracy—as opposed to the more abstract and classical curriculum has roots in the thinking of such educational and psychological leaders as Dewey, Thorndike, and others On the other hand, pressures have also

been applied by various groups for a return to a curriculum or to methods which do not make psychological or pedagogical sense And, unfortunately, rather than attempt to educate the public, schools have at times given way to these demands despite the fact that, in the final analysis, the only important consideration is the welfare of the child The effect of public pressures is evident in many classroom procedures and methods thus, fear of public censure has made schools cautious in their adoption of newer techniques of classroom management, of teaching reading, of dealing with the whole child, and of differentiated treatment of children with different abilities and background Indeed, the fact that we still grade children and report their progress on the old-fashioned report card, that we regulate our assignment of homework to the wishes of parents whom we have never bothered to educate is hardly indicative of professional status on the part of the teacher who ought to know what is in the child's best interest and who ought to be willing to exercise leadership in school matters rather than relinquish it to the school board, the P T A , or the general public This is not to imply that all public pressures have been misdirected and that the school should not be sensitive to the needs of society as reflected in public opinion It is simply that teachers need to be reasonably convinced of the desirability of the changes advocated before making them

Progressivism and Traditionalism

BASIC CONSIDERATIONS

The curriculum represents the content by means of which the school stimulates the child's growth It is, however, necessary for the curriculum to which the child is subjected to be broken down into units for, obviously, it cannot be assimilated as a whole This breakdown can be done in various combinations of two major ways (a) the subject-matter organization in which learning is arranged around some central topic logically organized and generally selected in advance by the curriculum-maker to fit the school on a local or even a statewide basis, (b) the experience organization centering on problems related to the desire of students in a class to satisfy some need or achieve some purpose These two approaches are not entirely independent and separate certainly all curriculum units incorporate both subject-matter and experience Likewise, both can result—and have resulted—in desirable outcomes Since these approaches in their extremes represent extremes in philosophical and

psychological orientation, a study of their major contrasts is of interest and value here These are nicely summarized in the following table, by Burton [53]

TABLE 18 1

COMPARISON OF SUBJECT-MATTER AND EXPERIENCE UNITS *

Subject-matter Units	*Experience Units*
begin, in the intention of adults to teach approved subject matter to pupils,	begin, in the intention of the learner, to achieve some purpose, to satisfy some need,
are organized logically around a core within the subject matter,	are organized psychologically around a purpose of the learner,
are prepared in advance by a person or group already familiar with materials and their logic,	are organized as they develop by a group facing a new situation for the first time,
are for the purpose of having the pupil acquire the logically arranged subject matter,	are for the immediate purpose of satisfying needs of the learner and with the ultimate purpose of developing desirable understandings, attitudes skills etc, in the learner,
are usually organized from simple to complex and within subject fields,	are usually organized functionally and in disregard of subject lines, especially in elementary grades,
are controlled by the teacher, by adult committee, by course of study,	are controlled by a cooperating group of learners which includes the teacher the course of study is utilized as needed,
are usually centered in the past in the "accumulated" not the "accumulating' culture, little reference to present or future, reference to future usually theoretical,	are usually centered in present and future, use accumulated materials from past freely in solving present problems,

* abbreviated from Burton [53]

TABLE 18 1 (*continued*)

COMPARISON OF SUBJECT-MATTER AND EXPERIENCE UNITS

Subject-matter Units	*Experience Units*
rely on formal methods, assignments, distinct lesson types, printed materials as chief sources, learning experiences few and formal,	utilize cooperatively planned procedures suited to situation, sources in great variety, learning experiences numerous and varied,
give all pupils the same contact with the same materials, some provision for individual differences	give contacts with many materials, individual differences cared for variously and automatically,
have fixed outcomes which are known in advance and required uniformly for all learners,	do not have fixed outcomes which are known in advance, and required uniformly for all learners,
at conclusion, evaluate through the use of formal tests of subject-matter acquisition, usually of fact or skill,	evaluate many complex outcomes continually, with constant pupil participation and through the use of many instruments, formal and informal,
close with a backward look so-called "review," and are done with when finished ·	lead to new interests, problems, and purposes

Whereas the differences in the two approaches involve many facets that defy easy synthesis, the major difference lies in their orientation The subject-matter approach is teacher-centered, it is predicated on the assumption that it is the function of adults to [a] select and organize the content, [b] present the material, [c] direct the learning, [d] measure the results, and [e] diagnose difficulties and provide remedial work where indicated There is an implicit assumption that unless teachers organize, teach, prod, test, the child will learn little or nothing By contrast, the experience school is pupil-centered and the work of the teacher lies in [a] setting the stage and utilizing the students' purposes in selecting the experiences by means of which they are to learn, [b] giving moral support and whatever help students need to achieve their purposes, and [c] cooperating in the evaluation and in the planning of the next step

A great deal of discussion of the relative advantages and disadvantages of these two approaches can be located in textbooks and professional journals under such headings as traditional and progressive, conservative and modern, teacher-centered and pupil-centered, and even autocratic and democratic, all used more or less synonymously In addition, the progressive method has, at various times, been called the *project* or the *activity method* or the *experience curriculum* Unfortunately, much of the writing on the subject has simply reflected the opinions of writers with a bias in one direction or the other, it is not uncommon, for instance, to find the discussion casts one method in its best possible light while, at the same time, emphasizing the shortcomings of the other Therefore, as we turn to a discussion of the two approaches, the student is cautioned against letting his prejudices on the subject obscure the real issues and to distinguish between what is an inherent strength or weakness in a method and what is more correctly an abuse—or perhaps an abuse to which the method is prone [3]

PSYCHOLOGICAL EVALUATION

The primary weakness of the teacher-centered approach stems directly from the fact that it is oriented toward adult goals and relies on adult direction, a situation which can easily run counter to the principle that an experience is educative to the extent to which it is brought into vital relationship with the needs, goals, and purposes of the learner It is based upon the philosophical view of education as a preparation for life, a position which Snygg and Combs [354] show to be psychologically unsound since the child cannot solve problems he does not have—and cannot have Because he would have to be an adult to have the self-concept of an adult, the only possible outcome of a curriculum based on such a premise is a childish response to an adult problem As they very aptly point out

> the process of equipping children with a repertoire of specific facts, skills, and techniques which will enable them to meet specific situations in adult life proves as impractical in theory as many generations of frustrated teachers have found it to be in practice

With the advance of educational psychology and the clarification of the nature of the learner and of the learning process—out of which the

[3] The author makes no claim to impartiality but strongly urges the student to make for himself a thorough critical analysis of the position taken, with a view not so much to note flaws in the arguments presented as to devise effective teaching procedures that will remedy the alleged weaknesses and take full advantage of the strengths

pupil-centered approach evolved—it has become increasingly evident that more effective learning is likely to result out of letting classroom experiences grow out of the child's purposes and goals than having them preselected and preplanned in detail by the curriculum-maker Of course, with a certain degree of psychological insight, the curriculum-maker can make a reasonably valid attempt at relating the curriculum to the purpose and development of the average child, he would certainly agree, for example, that the introduction into the curriculum of the Magna Carta, the Bill of Rights, and other historical events of man's struggle for independence should coincide with the adolescents need to gain emotional independence from adults However, it takes considerable ingenuity for the curriculum-maker to devise a curriculum that will fit all children of a given grade, regardless of ability, interest, and experiential background It also takes considerable ingenuity for the teacher to promote the readiness and the motivation for whatever topic comes next in the curriculum sequence In other words, the traditional preplanned curriculum does not lend itself well to taking advantage of the spontaneous interests and purposes of the class and of the opportunities for effective learning that sometimes present themselves

An obvious question arising out of the discussion of the preceding paragraph concerns the continuity of the experience from which the child is to learn In the teacher-centered school, this continuity is provided automatically by the expert curriculum-maker who plans the whole sequence The experience school, on the other hand, guided as it is by the interests and purposes of the child, has no such inbuilt guide toward its ultimate goals and, in extreme instances, can degenerate into the aimless wanderings for which the project method was often ridiculed with the much-repeated "Teacher, I wish we didn't have to do what we want to do, today" Obviously, when the planning of the curriculum is put into the hands of children, then education is likely to be fragmentary and incomplete But proponents of the pupil-centered method do not advocate that the curriculum be left to the whims of children They are as fully convinced as anyone else of the absolute necessity of having the general curriculum sequence—and particularly the over-all goals—planned in advance by experts The freedom they allow children *under the direction of the teacher* is in the choice of particular experiences by means of which the objectives of the curriculum are to be attained (Parenthetically, it should be noted that this puts the teacher in a key position, a professional person in a position to do a professional job And it allows no room for incompetence)

It is, of course, true that the experiences planned by children often

lack the tidy organization which an adult can give them and, at times, the teacher may feel a concern for the muddle in which children can get and a compulsion to step in and direct the learning along the lines common to the traditional method However, the emphasis upon logical organization, often accepted as the greatest strength of the teacher-centered method, needs to be questioned It rests upon the assumption—obviously false—that the material can be absorbed ready made from a structural standpoint in much the same way as impressions of wet ink are absorbed by a blotter Organization, continuity, and meaning lie in the learner, not in the material, and it is the learner who must organize his experiences They cannot be organized for him and, although the arrangement of the material by adults may facilitate the process of reconstruction by means of which he can obtain meaning out of his experiences, the process is certainly not automatic In fact, the beautiful (adult) organization of the material may have no meaning for the child with his particular background of ability and experience, as many teachers have realized as they despairingly read on the examination the child's garbled renditions of the explanations so clearly stated in the book or given in class

Of primary importance in connection with any learning situation is the matter of the motivation of students and this is one area which has a definite bearing on the relative effectiveness of the two methods To the extent that the traditional curriculum is selected by adults and oriented toward the attainment of adult goals it has to rely on the ability of the teacher to sell these goals to children This, certain teachers are able to do effectively in at least a good percentage of the time for a good percentage of the children, especially since certain topics and subjects have a certain inherent appeal to the children for whom they are intended Teacher approval is an important aspect of the total situation and many good teachers are able to have children gradually develop interest in the subject-matter as well as a positive self-concept as it relates to academic work

The situation is not always so ideal, however Since the goals are adult goals, often related only remotely to the goals of a good fraction of the members of the class, it is not surprising that, for many children their attainment or unattainment is a matter of relative indifference As a consequence, motivation has to be extrinsic, and an excessive emphasis on competition, grades, and other external incentives is more or less a natural adjunct of the traditional school, as a number of pupils, denied the satisfaction which stems from striving for meaningful goals, work to avoid punishment or for a grade as something to salvage out of an

otherwise distasteful activity Very often students have as their primary goal the circumventing of the goal set by the teacher The latter, on the other hand, uses whatever means his ingenuity enables him to devise Some teachers are relatively restricted in imagination and can think of nothing beyond sarcasm, scolding, failure and punishment, and various forms of threat in order to force the class toward the prescribed goals— presumably on the assumption that [a] learning is learning, regardless of the means used to promote it, and [b] if children are made to comply long enough, they will continue to comply through the operation of habit motives Very effective learning actually occurs in many cases However, for many other children, whatever learning does take place is often relatively meager and superficial, but there is certainly nothing superficial about the negative attitudes that are promoted

The pupil-centered classroom, on the contrary, by using the student's purposes and background as the starting point and by placing on his shoulders a greater share of the responsibility for his education, is more likely to stimulate ego-involvement and wholehearted acceptance of the goals toward which he is to strive Since it is his problem in the sense that he had a hand in choosing it and planning its execution, he is not only more likely to work effective in carrying it out but also to derive a greater degree of satisfaction at its solution (Note, for example, the difference between the learning of the student preparing a speech to hand in to his teacher as an assignment and that of the student preparing a speech in connection with his campaign for election to office in the student government) As a result, the need for external incentives with which to goad him is correspondingly reduced and the likelihood of a virtuous circle of success, interest, and self-actualization is correspondingly increased

The fact that apathy, misbehavior, and ineffectiveness in learning are more or less direct resultants of the unsuitability of its goals and the unrealistic demands it makes upon children was not fully appreciated by the traditional school Rather, as pointed out by Beaumont and Macomber [29], it considered motivation and misbehavior as appendages extraneous to the business of the school to be dealt with through external incentives and, where necessary, through punitive disciplinary measures Many teachers today are equally shortsighted and much of the difficulty still to.be found in our schools with respect to motivation and discipline is the direct outcome of their failure to relate their procedures and their curriculum to the needs and purposes of children This is well stated by Snygg and Combs [354] in the following quotation

It is quite likely that much of the conflict between pupils and teachers which still occurs in school is due to the fact that the schools are run by teachers who are chiefly concerned with preparing the student for his function in adult life and are filled with students who want to satisfy their needs here and now

Thus, whereas the student-centered classroom, by adapting the work to the group and to the individual child and, thereby, providing him with the opportunity for continuous satisfaction for his needs, undercuts the child's need to misbehave, the traditional school often has to resort to repression However, repressive discipline does not make the curriculum any more suitable it merely increases the tensions associated with the frustration of the child and, whereas it makes for order—and a certain amount of learning—it often has a detrimental effect on his over-all growth

The practical significance, to those who would guide the growth of children, of the point discussed here cannot be overestimated No matter from which aspect of his self-realization it is viewed—academic growth personal and social adjustment, attitude and character formation—it is evident that the individual, whether a child in school or an adult at work, must find satisfaction for his needs out of meeting the demands of the job or the classroom rather than have to rely on extrinsic incentives such as grades or salary or the satisfaction of such side activities as the after-school athletic program, the after-work bowling league, or the coffee-break friendships As it pertains to the school child, this means that the organization of the classroom and its curriculum must have inbuilt satisfactions, i e , it must make it possible for the child to derive his major satisfactions, not out of getting a grade or misbehaving, but rather out of solving meaningful and challenging problems, and out of contributing to the attainment of group goals The fact that the student-centered approach tends to have greater possibilities from this standpoint constitutes one of the strongest arguments in its favor

The advantages noted so far of relating the curriculum to the goals and purposes of the learner are of obvious importance but we still have to consider what is to the average layman the most crucial question, namely, the extent to which experiences so organized lead to effective and desirable learning outcomes Critics of the progressive school, on the thesis that work is work and play is play (Tom Sawyer to the contrary notwithstanding) have, at times, interpreted the fact that children have a good time or enjoy school, that they do "what they want to do' as

evidence supporting their contention that little learning is taking place They fear that giving children a say in the choice of activities will result in their selecting what is easy and pleasurable (another instance of soft pedagogy) and that, as children flit from one pleasant activity to another, little will be learned They fear, for example, that children in the progressive schools will be weak in the fundamentals which are more difficult to integrate into an experience unit

Two factors prevent the learning in the pupil-centered classroom from being oriented toward the easy and the pleasurable but useless One of these is the fact, previously stated, that the general curriculum and the over-all goals of pupil-centered schools are set by adults and not by children so that, except in cases of teacher incompetence in the use of the method, the danger is relatively small The second consideration is even more fundamental children want to grow, to be challenged, to explore new areas To fear that children will seek easy tasks is to fail to grasp the central theme of the concept of the phenomenal self advanced by Snygg and Combs [354]

> Such criticism would fail to take into account the fact that in shifting the major purpose of education from the acquisition of subject matter to the development of an adequate phenomenal self, we have shifted to an activity for which the child does not need to be motivated Building a satisfactory phenomenal self is the primary motive of his every act His basic need is for the preservation and enhancement of his phenomenal self [r]

It is only when the child is under threat (due to unrealistic demands, failure, and punishment) that the student plays it safe normally, the fact that they do not lead to self-enhancement will prevent him from seeking easy tasks Furthermore, new and more mature interests come easy to the child whose curiosity and initiative have not been blunted so that he will want to forge ahead toward new conquests

Also related to the question of the effectiveness of the progressive school in promoting desirable learning outcomes is the criticism often heard of the time allegedly wasted by students as they select and plan an activity (by comparison with the traditional approach in which the teacher comes fully prepared with the work of the day) There is, of course, in any procedure calling for group planning, a danger of having endless and pointless discussion There is the further danger that the final plans and products will be not nearly as perfect as they would have been had the teacher taken a more active part All of this may be frustrating to the perfectionistic teacher—and even to the brighter members

of the class The highest degree of efficiency and perfection would prob-
ably be attained when the teacher did it all by himself or appointed the
best students to carry out the project in the name of the class but this
would hardly result in much learning on the part of children The im-
portant thing is not the product but the learning that takes place in the
process Group selection and planning of classroom activities are essential
aspects of the pupil-centered approach and they are at the very founda-
tion of its success Far from being wasted, the time taken results in the
selection of an activity which is realistically related to the needs, goals,
capacities, and interests of the group, in the ego-involvement of the
various members in the cooperative attainment of group goals, and in
the clarification of the part each is to play The outcome is not only a
more effective contribution on the part of each individual child but
a greater degree of satisfaction and self-fulfillment Cooperative selection
and planning of units spell the difference between the child going aim-
lessly and apathetically toward a goal known only to the teacher and
one working on an activity which he sees as real and potentially satis-
fying As pointed out by Wingo [421]

> . the most fruitful kind of learning experience is one in
> which a person or group evolves a plan for dealing with a mean-
> ingful situation, puts the plan into action, and then evaluates
> the outcome of the plan in terms of its original purpose

The fear that student participation in the selection and planning of
classroom activities will lead to their becoming "happy morons" whose
learning is meager and fragmentary has not been borne out by research
Comprehensive studies such as the Eight-Year Study [2] and many
others [205] have invariably shown students of progressive schools to
be at least up to par on the fundamentals and considerably superior in
ability to reason critically, to apply what they know, and to integrate their
experiences They also tend to be superior in cooperation, self-confidence,
sociability, effectiveness of expression, breadth of interest, and creativity

It is particularly worthwhile to note that the superiority of the
pupil-centered approach is largely from the standpoint of the functionality
of the learnings it promotes The teacher-centered method is reasonably
effective in promoting the learning of isolated facts and skills (provided
it can deal with the motivational problem) but psychology is not in-
terested in knowledge per se unless it is reflected in behavior When
all is said and done, the activities of the school, its curriculum, and its
methods must be evaluated in terms of the difference it makes in the
life of the learner the employer, for example, is more interested in

whether the graduate can do the job than he is in the number of facts he can reproduce for an examination This is actually a fundamental distinction whereas the traditional school with its subject-matter orientation stresses the acquisition of knowledge as an end in itself, the modern school is interested in knowledge only as it becomes an integral and functional part of the learner's life Or, stated differently, whereas at times the old school seems oriented toward making the pupil a ' cyclopedia of useless information" [93], the aim of the modern school is not merely to "engender information and skill but to guide his purposes, attitudes, and interests   " [432]

Since the activities of the pupil-centered classroom stem from the existing motives of the child and are, therefore, more in line with his background of ability and interest, they are more likely to be functional in guiding his further purposes Thus, a child working on a unit on city government which involves him in interviews with the city commissioners is more likely to appreciate the working and importance of city government—and also more likely to develop civic attitudes, effectiveness of expression, and social graces—as a result of having *lived* the experience rather than having merely studied about it in his civics book Such an approach is also more likely to be effective in fostering self-reliance, pupil initiative, habits of independent study, or problem-solving techniques In other words, an experience unit is more likely to originate from the whole child and to be reflected in changes in the whole child, e g , understandings, applications, appreciations which go beyond the confines of subject-matter

Contributing to a considerable extent to the ineffectiveness of the conventional school from' the standpoint of the functionality of the learnings it promotes is the fact that, with its compartmentalization of subject-matter, it often cuts across real experiences and reduces education to the memorization of isolated facts along a narrow and artificial path This is not a necessary accompaniment of the traditional method but definitely a weakness to which it is prone Because it is defined in terms of subject matter, it encourages the development and use of a text designed to incorporate said subject-matter as decided upon by the curriculum-maker In the absence of a more meaningful guide to the learning of the child who, in many cases, has no great interest in it anyway—in a series of easy steps—the subject-matter approach often becomes a textbook approach and, in its extreme form, degenerates into a chapter-at-a-time or page-at-a-time routine devoid of any purpose beyond that of covering the book before the end of the year On the con-

trary, the ultra-flexibility of the pupil-centered approach, if nothing else, at least discourages the exclusive use of a "prescribed" text and encourages the development of resourcefulness and proficiency in locating and integrating information from multiple sources

Also vitally involved in the relative success of the teacher-centered and the pupil-centered methods is the extent of their adaptability to individual differences among children Generally speaking, the former, with its preplanned curriculum, does not permit easy adaptation of the work of the school to individual differences in ability, interest, and experiential background This is especially so when it gets tied down to a textbook which is then followed slavishly on a page-by-page basis despite the fact that, being pitched at a certain level, it frustrates both the duller and the brighter child For successful operation, without undue departure from its basic procedures and its preplanned curriculum, it has to place considerable emphasis on development of the required pupil readiness However, pupil failure and retention are often too useful a crutch for teachers who are accustomed to fight unmotivated students, and wholesale retardation is rather typical of the old school's attempt at dealing with individual differences Equally, if not more objectionable from the standpoint of effective education, is its emphasis on drill oriented toward the attainment of limited objectives, as we have noted in Chapter 15 By the very nature of its curriculum and the apparent assumption that the same lesson is equally educative for all the traditional subject-matter approach tends to make unrealistic demands upon many children Probably its most effective measure from the standpoint of actual reduction in the range of individual differences—and one of the most vicious—consists in encouraging the dropping out of frustrated and bored students In more recent years, 'social promotions" have replaced retention and state laws have curtailed the incidence of drop-out but these have hardly made the traditional curriculum and methods any more adaptive to differences among children

The pupil-centered method, by contrast, is more flexible not only is the class likely to select units that are more realistically in line with its interests and resources but it can also make adjustment for individual differences in the allocations of responsibility for the various aspects of the project among members of the group so that each child can derive the benefit and the satisfaction of making a contribution in keeping with his talents and interests .

Of major significance from a modern psychological point of view is the much more effective use made by the student-centered approach

of the fact that the classroom involves a social situation and, as such, constitutes the teacher's best ally in promoting the all-round growth of the child Whereas the traditional school with its emphasis on competition and individual assignments discourages the development of group spirit and group cohesiveness and often promotes a pupil-versus-pupil (and pupils-versus-teacher) situation, the pupil-centered approach encourages the development of a social situation in which each member contributes to the cooperative attainment of group goals and in which the teacher is a resource person helping children toward self-realization As a result, not only does it tend to make possible greater academic gains through the inter-stimulation of members and a greater degree of ego-involvement of the individual child but, through its group organization, it provides practice in the democratic resolution of group problems through group discussion and group planning

On the other hand, one must not make the volume of discussion going on in a classroom the criterion of its quality [1] Certainly, discussion is often futile and, at times, most undemocratic Not only can it become essentially a pooling of ignorance, but it can degenerate into an endless verbiage on the part of a few empty-heads, endless arguments over inconsequentials, and domination by a few demagogues within the group The teacher needs to be particularly skillful in moving discussion along and keeping it on the right track and in preventing a few individuals from monopolizing the conversation or from making a mockery of democratic processes It would seem logical to assume, for example, that if someone has to dominate the group, it might as well be the teacher who is at least better informed and better trained

The child-centered approach is also generally more effective in promoting wholesome attitudes The fact that it gets children involved in cooperative activities in which each member contributes to the attainment of group goals is conducive not only to the development of cooperation, consideration for others, social and civic responsibility, enlightened self-interest—all of which are of prime importance in a democratic society—but it is also conducive to the actualization of these attitudes through active participation in worthwhile and meaningful activities This is one area in which the traditional school is often lacking on the assumption that knowledge is sufficient for the development of desirable attitudes and behavior, it is, in many cases, concerned almost exclusively with the imparting of knowledge If the child develops nega-

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[1] The classic statement on the subject is that of Gates et al [130] who point out that even a commodity so abundant as hot air is subject to monopoly

tive attitudes toward the school, toward learning, toward persons in authority, that is too bad—as long as he learns This is, of course, not to imply that it invariably produces negative attitudes, for the nature of the attitudes developed would vary with the nature of the atmosphere of the class, the relative success of the individual, and other factors It would be ridiculous to suggest that these are always, or even generally, unsatisfactory On the other hand, it is probably true that the progressive method is more oriented toward the importance of attitudes in the determination of the individual's behavior and, because of its emphasis on group participation toward the attainment of meaningful goals, it tends to be more effective in promoting positive attitudes

SYNTHESIS

The previous discussion has pointed to the relative superiority from the standpoint of psychological theory of the pupil-centered over the teacher-centered approach The evidence also points to its superiority from an empirical point of view, although considerable variation may be expected from situation to situation The former lends itself more readily to the promotion of the major objectives for which the modern school exists but, as may be expected, the extent to which its potential advantages are realized depend in no small measure upon the capability and the ingenuity of the teacher and other aspects of the local situation Thus, as we have stated on page 498, a project on city government which calls for interviewing city officials might be expected to produce a better understanding and appreciation of city government than the study of it in a book but this would not necessarily be so It is entirely possible that the child might get little beyond the name of one or two of the commissioners and a few minor details while missing out completely on seeing the complete picture in perspective It seems reasonably clear that a combination of the traditional and progressive approaches, depending on the suitability of one or the other for a particular unit of the curriculum would result in more effective learning than would complete adherence to one alone Certainly not all tasks are amenable to the group project approach, for example

Likewise, one or the other of the two methods may tend to be more suitable for certain students Thus, the traditional method by making fewer demands on the child in terms of self-direction, ingenuity, initiative, and originality may provide a more reassuring atmosphere for the emotionally insecure child—and teacher Also, it is likely that the logical organization of the subject-matter approach is more effective for the

bright or mature student or for the college situation and that the activity method is better suited to the elementary school Thus, Burton expresses the view that

> The education of *little* children, or beginners . . is believed to proceed better when experience units are used by competent teachers
> The education of students who have more *adequate reading ability* and who have *achieved sufficient maturity* to be able to *learn through verbal abstraction*   is believed to proceed better when the assign-study-recite-test procedure as currently improved is used by competent teachers

Generally, the elementary school is more oriented toward the use of the activity method than is the high school This may stem in part from the fact that teachers-in-training choosing the elementary level are perhaps more oriented toward children whereas those going to the secondary level are more oriented toward subject-matter It may also be, of course, that arithmetic is more adaptable for inclusion in a project than is solid geometry, for example Yet the Eight-Year Study was conducted—with considerable success—at the high school level, and therefore the question may be raised as to whether some of the ineffectiveness of our high schools may not be related to their use of antiquated techniques On the other hand, the grade school must be cautioned against exclusive reliance upon projects and activities the young child needs contact with concrete experiences but experiences are useful and usable only when synthesized into generalizations—and the subject-matter approach may well be an effective way of integrating these experiences, once he has had them

The pupil-centered approach is not without its critics Some of the criticisms to which it has been subjected are ill-founded and based on a lack of understanding of what the school is trying to do, the psychological principles underlying its techniques and procedures, and the role of the school in modern society This may perhaps be blamed on a failure of the school to communicate with the public Many critics have used the schools as a scapegoat in connection with their frustrations over the prevalence of juvenile delinquency, over international tension and the cold war, and hurt pride that "practical and scientific America" should have "allowed" Russia to launch the first rocket to the moon

Criticisms can also be expected inasmuch as some people are against any change and are likely to resent any departure from the "good old days" when they went to school And, of course, the fact that those who

did graduate from the old school (with the drop-outs and the repeated grades eliminated from the discussion) did know how to spell, read, and compute, and that, as a group, they are now successful in the community only adds strength to their conviction that the progressive school is "off the track" (On the other hand, some people will accept anything simply because it is new—in the case of education, perhaps unconsciously feeling that any change from the old school which they attended would have to be an improvement) Other criticisms, however, represent valid objections to what may be considered misuse or abuse of the method—or perhaps objections to the price the progressive method may have to pay in order to reap greater benefits in other directions Educational psychology, of course, does not have all the answers and certain techniques which it apparently endorses may actually be in considerable error

As we have also seen, the teacher-directed approach is not without certain merits, particularly as it applies to the promotion of academic growth and if this were the only consideration, it could probably be modified rather than abandoned Its greatest weakness lies in the area of promoting the all-round growth of the child where, to be effective, it would generally have to undergo considerable modification from its present organization This is not to say that the traditional method is incapable of dealing with the whole child Whereas it is often associated with the teaching of facts and skills by methods that are frequently dull and boring, reinforced by coercion, there is no denying that many teachers who have used the method with ingenuity and insight into its possibilities have not only made the subject-matter approach exceedingly interesting and challenging but have also turned out graduates educated in the best sense of the word

There is reason to suspect that the superiority of the progressive method stems from the type of teacher it attracts almost as much as it does from any superiority inherent in the method Many of the teachers in traditional schools, upon which criticism of the method has been based, are perhaps not as well qualified and as familiar with the principles of educational psychology as those who, by training and experience, want to experiment with a new method and to apply psychology to the classroom, and who are also more apt to be understanding and flexible in dealing with children Also involved may be an important personality difference the teacher who is secure and who displays competence, initiative, and resourcefulness tends to be more willing to experiment—realizing that the progressive class being more loosely organized, might result in bedlam if things go wrong The insecure teacher, on the contrary, is likely to stick to the safer subject-matter ap-

proach It should also be noted that whereas a dull, unintelligent, and incompetent teacher may be able to go through the motions of using the traditional method on an autocratic, page-assignment basis, such a teacher could not handle the experience method In fact, a definite weakness of the progressive method lies in the demands which it makes upon the ingenuity and competence of the teacher In the hands of the wrong teacher—or even the inexperienced teacher—it can lead to disastrous results Both methods lead to good results in the hands of the competent teacher—the pupil-centered approach merely allows more freedom for the competent teacher to display his competence

Blueprint for Effectiveness in the Classroom

The classroom depends for its effectiveness upon its compliance with the principles of psychology The list of these principles is, of course, too long to be reviewed here Therefore, this section will attempt simply to give a very brief overview of the major ideas of this text, an understanding of which is essential to the teacher interested in effective classroom procedures

The author, being unaware of any particular virtue in ignorance or incompetence, does not wish to minimize in any way the importance of the knowledge of subject matter, of methods, and other aspects of teaching a teacher lacking in these areas is simply unqualified Nevertheless, this text has consistently emphasized the view that an understanding of the *why* of the child's behavior is the key to guidance of his growth and development It is the author's contention that the greatest source of failure in the classroom stems more from the teacher's inability to deal effectively with the motivational and personal aspects of teaching than from any other cause (as indeed it does in any situation involving people as they interact with each other) It is not uncommon for a supervisor to find that a beautiful lesson plan has been worked out by a teacher who has a good grasp of the subject, who has also brought in a nice balance of audio-visual aids and other illustrative materials, and who is fully prepared to teach—the only thing that is missing is an appropriate answer to the question "Specifically what would make the children in the class interested in the material to be presented?" Many an otherwise good lesson has floundered on that question Accordingly, the following points may bear reconsidering

[a] The key idea which any prospective teacher must never lose

sight of is that behavior is purposive it always occurs in connection with the satisfaction of the individual's needs,

[b] However, as a result of his previous experiences, the individual learns to satisfy his needs in a specific way, i e, not only to seek the satisfaction of his needs but to do so through the attainment of specific goals Thus, motives rather than needs determine the individual's behavior not only will the individual satisfy his needs but he will satisfy them in ways consistent with his past experiences, his habits, his values, his self-concept

[c] In the face of the multitude of unsatisfied motives with which the individual is invariably confronted (some of which are reinforcing, others conflicting, each with a certain vector strength in a given situation), behavior is the net resultant of relevant motives Thus, behavior is oriented toward the satisfaction of dominant motives Conversely, the individual can be relied upon to take whatever steps within his power he needs to take in order to attain the purposes which are* important to him He can do no more and no one can expect him to do more!

[d] Since behavior results from unsatisfied motives, a certain degree of tension is conducive to learning On the other hand, excessive tension is likely to result in anxiety and ineffective, if not deviant behavior Probably no other developmental concept has greater implication for effective living than that of the development on the child's part of security, i e, relative freedom from anxiety

[e] Every*experience the individual undergoes is potentially satisfying or frustrating depending on the degree of readiness he brings to bear upon the situation Every aspect of his development has a bearing on the attainment of his goals and he cannot be considered except in his totality

[f] Maturity implies behavior that is effective in the attainment of goals and constructive from the standpoint of the welfare of others Any educational system must not only orient the child toward the concept of enlightened self-interest but must also provide him with practice in social living, i e, practice in making decisions involving the welfare of the group of which he is a member

[g] Not only does the social group provide the maximum opportunity for satisfaction of the individual's needs but, indeed, only through the group can the individual attain maximum self-realization

[h] The school, as an agent of society has no greater mission fipm the standpoint of the welfare of both society and the individual than the development on the part of the latter of sound character based upon a foundation of positive attitudes and ideals of integrity, morality, and consideration for others

The same concepts apply to the classroom the key to effective educational experience lies in the motives of the child The child will exert himself with whatever capacity he can muster when he is working toward goals that are real and meaningful in terms of his needs, motives, and purposes, on one hand, and his background of ability and experience, on the other His need for self-enhancement will not permit him to do otherwise Such experiences, in turn, will make for [a] maximum learning, retention, and functionality from the standpoint of successful living, [b] success and maximum tension-reduction and self-fulfillment, and [c] desirable attitudes and values On the contrary, to the extent to which the child is forced to participate in experiences which are not related to the attainment of his goals and purposes, aversive effects—apathy, superficial learning, frustration, negative attitudes, misbehavior, maladjustment—are bound to follow

The implementation of this principle into actual classroom practice is obviously too comprehensive a matter for complete coverage here The discussion will, therefore, be restricted to a listing of the following as minimal essentials of such a program

[a] An understanding of children·

1 In general teachers need to understand children in terms of the psychological principles that govern their growth and development, of the particular characteristics and problems of children, of the role of readiness and maturation

2 Individually the teacher cannot provide meaningful experiences for a child whose ability, interests, background, values, goals, or purposes he does not know

[b] A suitable curriculum.

1 There is need for a good selection of educational experiences designed to promote desirable behavior changes in individual children in the most efficient way These experiences must not be standard for all children in a given grade or class but must, on the contrary, be tailor-made with respect to content and method of presentation to fit the particular child

[c] A social situation conducive to the maximum self-realization of the child

1 The children of the class must be integrated into a cohesive group characterized by unconditional acceptance of individual members,

effective communication among members and between members and teacher, commonness of purpose, and enthusiasm in the attainment of worthwhile goals

2 The teacher, as a group leader, must be one who can communicate with and inspire children

[d] Effective guidance of the process by means of which the child is to achieve his potentialities

1 Guidance is needed if experiences are to be satisfying to the child and effective in promoting his growth At the same time, the teacher must realize the necessity of having the learner actively involved in the learning process and must provide for ego-involvement through the operation of realistic and clear-cut goals

2 Effective learning centers around such concepts as problem solving and meaningfulness and implies experiences that are real in terms of the child's purposes, interests, abilities, and background It must, in turn, be reflected in functional behavior and in more mature interests, goals, and purposes

3 The school program should capitalize on the child's natural desire to grow and be synchronized with his natural pattern of development so as to promote his maximum self-realization

4 Meaningful group participation in the pursuit of realistic and worthwhile goals is one of the best means of (a) promoting the development of personal and social adjustment and of sound attitudes and character, and (b) of having them reflect in positive behavior

[e] A competent, sensitive, and dedicated teacher

1 The teacher is certainly the most important cog in the educative machine and, although we cannot list all the characteristics and traits which would be desirable for a teacher to have, we may at least mention the following (a) a thorough grasp of subject-matter, (b) ingenuity and competence in setting the stage for the maximum growth of the child, in guiding the learning process, in welding students into a cohesive group working toward common goals, (c) sensitivity to the needs and problems of children, a firm conviction in the inherent dignity of the individual, and a dedication to the cause of promoting his maximum growth, and (d) an awareness of his responsibility as a leader of youth, of the importance of personal integrity, and a sincere interest in the welfare of children

2 Ability to relate to children and inspire them toward the moral values and democratic ideals of our society

The education of the child is obviously a complicated task which does not allow for pat solution or easy prescription Society has a general idea of the type of person a graduate of its schools should be, it can even list tentatively the requirements and perhaps describe the process for educating such a person as we have attempted to do, in part, in this text And on the surface, it would seem that these are not only necessary but reasonably sufficient conditions for the promotion of an educated person Education, however, may be likened to housebuilding—whether we get an effective and livable house out of the required quantity of cement, lumber, and other materials depends to a large extent on the professional caliber of the architect and the builder, so also does the quality of the final product turned out of our schools depend to a large extent on the professional competence of the curriculum maker who devises the program and of the teacher who puts his plans into action An error on the part of either can negate the best efforts of all concerned

There is not complete agreement as to what to include in the curriculum and—within limits—perhaps it is not necessary that there should be, since it is the growth that results from a given experience rather than the experience itself that counts But there should be reasonable agreement as to what constitutes an effective—and an ineffective—teaching method The technological progress which has put America in a position of world leadership has not been achieved through procedures that were "good enough" It is time we begin to expect from our schools the same degree of efficiency that characterizes other areas of scientific endeavor We need to re-evaluate our schools and their procedures, not for the purpose of labeling them 'traditional' or "progressive" but rather for the purpose of identifying those that bring about results and those that do not, not with a view toward immediate implementation of a panic-sponsored crash program, such as the Sputnik-inspired increased emphasis on science and on stiffer grading, but rather with a view toward bringing educational practice in line with sound philosophical and psychological considerations When this is done, we shall no longer have to apologize for our failures, and our students will be as adequate as their potentialities permit

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QUESTIONS AND PROJECTS

1 What are some of the more significant outcomes of a high school education?

2 Spell out in terms of specific measurable outcomes the four major objectives of the Educational Policies Commission of N E A , viz , self-realization, human relationships, economic effectiveness, and civic responsibility Choose as your point of reference the status that might be expected of a high school senior

3 What are some of the attributes of a well-educated person?

4 What would lead a given teacher to favor a teacher-directed — or pupil-directed — type of classroom management? Under what conditions would each be more likely to be effective? (Consider the personality of the teacher the nature of the subject, the ability and experience of the students, the rigidity of the curriculum)

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